The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 132, NO. 3 — CHICAGO, ILLINOIS — SEPTEMBER 21, 1946

COPYRIGHT, 1946, BY AMERICAN MEDICAL ASSOCIATION

THE NATURE AND TREATMENT OF CHOLECYSTITIS

W. D. GATCH, M.D.; J. S. BATTERSBY, M.D.
Indianapolis
and
K. G. WAKIM, M.D.
Bloomington, Ind.

The idea that infection is the sole cause of cholecystitis still prevails and still governs treatment. The evidence against it, which has been accumulating for the past twenty years, is just beginning to appear in textbooks on surgery. Likewise, the idea that cholecystitis is caused primarily by chemical action has made slow headway, though the reasons for believing it are compelling. Writers on the cause of cholecystitis have considered chiefly experimental observations on diseased human gallbladders. They have been slow to suggest the clinical application of their conclusions. Practice is not abreast of knowledge. These facts seem to justify the present paper.

MAJOR CAUSES

Infection.—The pertinent facts on the relationship of infection to cholecystitis are the following:

1. Cholecystitis is rare in children, although infections are more commonly observed in children than in adults.

2. In about two thirds of all cases of cholecystitis the bile is sterile. The bacterial flora of the normal gallbladder and that of the inflamed gallbladder are the same.[1] Aronsohn and Andrews have ably reviewed the enormous literature on the experimental work which has been done to prove that infection causes cholecystitis. The results reported are contradictory and totally inconclusive.[2]

3. The microscopic appearance of the inflamed gallbladder is almost never that of inflammation due to bacteria.

Abdominal wounds for the treatment of acutely inflamed gallbladders almost always heal without infection.

Chemical Agents.—Numerous observations on injuries to the gallbladder by chemical agents have been made. The earliest of these is that of Clairmont and von Haberer[3] (1911) on peritonitis due to bile without perforation of the biliary passages. A number of foreign observers[4] and Wolfer[5] in this country have shown conclusively that this condition is due to injury of the gallbladder and biliary passages by pancreatic juice. Mann[6] (1921) observed gangrene of the gallbladder after the intravenous injection of Dakin's solution. He showed that this solution reaches the gallbladder by way of the blood stream. Aronsohn and Andrews[2] reported the experimental production of cholecystitis—in every respect like human cholecystitis—by subjecting the gallbladder to the action of concentrated solutions of bile salts. Womack[7] (1940) reported the production of cholecystitis after the ligation of the cystic duct and the injection of concentrated bile into the gallbladder. He showed also that other constituents of the bile may injure the gallbladder wall, though he apparently found no constituent except the bile salts which can cause an acute inflammation of it.

We have positive proof that pancreatic juice can cause acute cholecystitis in man, but we lack proof that it is the common, or even a frequent, cause. The demonstration of the presence of amylase in high titer or of lipase in the contents of the gallbladder or in the peritoneal fluid is the only conclusive proof that a given case of cholecystitis is due to the action of pancreatic juice. We have been unable to find a report of any series of cases in which tests for these ferments have been made, except one by Popper.

Popper[8] examined for amylase 219 specimens of bile obtained at operation. Nineteen of these were from patients having pancreatitis or peritonitis due to bile. These contained amylase. He found amylase in high titer in 10 per cent of the remaining 200 specimens but could find no reason to think that this amylase had in any way injured the gallbladders from which it had been obtained. Thus the evidence at present available indicates that pancreatic juice is not a common cause of cholecystitis.

EXPERIMENTAL PRODUCTION

The bile salts are the only other chemical agents normally present in the body which have been proved to be able to cause cholecystitis in the experimental animal. That they can produce it in man has not yet been demonstrated, though the probability that

Done with aid of a grant from Eli Lilly & Co.

1. Andrews, E., and Henry, L. D.: Bacteriology of Normal and Diseased Gallbladders, Arch. Int. Med. **56:** 1171 (Dec.) 1935. Feinblatt, H. M.: The Infrequency of Primary Infection in Gallbladder Disease, New England J. Med. **199:** 1073, 1928.

2. Aronsohn, H. G., and Andrews, E.: Experimental Cholecystitis, Surg., Gynec. & Obst. **66:** 748, 1938.

3. Clairmont, P., and von Haberer, H.: Gallige Peritonitis ohne Perforation der Gallenwege, Mitt. a. d. Grenzgeb. d. Med. u. Chir. **22:** 154, 1910.

4. Blad, A.: Stuchen über Gallenperitonitis ohne Perforation der Gallenwege, Arch. f. klin. Chir. **161:** 549, 1930. Buchanan: Bile Peritonitis Without Evident Perforation, Surg., Gynec. & Obst. **26:** 303, 1918. Clairmont and von Haberer.[3]

5. Wolfer, J. A.: Further Evidence That Pancreatic Juice Reflux May Be Etiologic Factor in Gallbladder Disease, Ann. Surg. **109:** 187, 1939; The Role of Pancreatic Juice in the Production of Gallbladder Disease, Surg., Gynec. & Obst. **53:** 433, 1931; Pancreatic Juice as a Factor in the Etiology of Gallbladder Disease, Surgery **1:** 928, 1937.

6. Mann, F. C.: The Production by Chemical Means of a Specific Cholecystitis, Ann. Surg. **73:** 54, 1921.

7. Womack, N. A., and Bricker, E. M.: Pathological Changes in the Gallbladder Due to Action of Bile, Proc. Soc. Exper. Biol. & Med. **45:** 710, 1940.

8. Popper, H. L.: Pankreassoft in der Gallenwegen, Arch. f. klin. Chir. **175:** 660, 1933.

they can do so is strong. We have made an experimental study of this question. We have done, in all, four series of experiments. Some of these are original, some a repetition of experiments reported by others.

Series 1.—Effects on the gallbladder of solutions of bile salts injected into it through a catheter: To avoid trauma of the gallbladder the catheter was passed into it by way of the common and cystic ducts. The subjects were 4 dogs. Five per cent solutions of sodium taurocholate or of sodium glycocholate and stronger solutions of commercial bile salts were used. The results were immediate in every instance. The gallbladder first showed edema, which rapidly became intense. Punctate hemorrhages then appeared all over it. Next it took on an intense dark red color. Microscopic sections revealed edema and interstitial hemorrhage. In no case did we observe any edema around the common bile duct.

Series 2.—Effects of injecting a five per cent solution of either sodium desoxycholate, sodium taurocholate, or sodium glycocholate into a branch of the portal vein: The subjects were 14 dogs. Aronsohn and Andrews injected solutions of bile salts into systemic veins. They observed effects on the gallbladder in about half their experiments. They found that bile salts so given are extremely toxic. We injected the salts into a branch of the portal vein to avoid this effect. In all cases the changes in the gallbladder after these injections were immediate and identical with those observed in series 1. Four dogs were allowed to recover. They showed no ill effects as a result of the injection. When they were killed a week later, their gallbladders were found to be about twice the normal thickness. Microscopic sections disclosed no change from normal except edema and the presence of a few fibroblasts. No necrosis was present. All extravasated blood had been absorbed. This observation shows that the gallbladder may make a remarkably good and prompt recovery from the injury caused by bile salts. These experiments indicate that bile salts which reach the liver by way of the portal vein are so rapidly secreted by the liver that they do not reach the systemic circulation in sufficient strength to cause toxic effects. A reasonable conclusion is that the injury must be very great or frequently repeated to cause fibrosis of the gallbladder. The experiments of Cole [9] on the effects of partial obstruction of the cystic duct support this conclusion. He observed no thickening of the gallbladder until several months had passed.

Series 3.—Effects of injecting a solution of activated pancreatic juice into the ampulla of Vater: Three dogs were the subjects. We did these experiments to discover whether or not activated pancreatic juice damages the bile ducts. One dog died within fifteen minutes after an injection made with considerable force. Beginning necrosis was observed around the bile ducts in the liver. We injected pancreatic juice under moderate pressure in the other 2 dogs. We sacrificed 1 of these immediately. The other recovered and remained in good condition for six days, when it was killed. We observed edema around the common duct in all 3 experiments; also decided inflammation of the gallbladder. Microscopic sections revealed edema of the walls of the common bile duct and of the surrounding fat but no interstitial hemorrhages or necrosis. The activated pancreatic juice in these experiments could act for only a short time. It would have caused great damage to the ducts if stasis of bile had prolonged its action. We concluded that activated pancreatic juice does damage the bile ducts. This conclusion is supported by the experiments of Bisgard and by observations on the condition of the bile ducts in cases of nonperforative peritonitis due to bile in man.

Series 4.—Effect on gallbladder of bile salts injected into the portal venous system after ligation of the cystic duct, or when the gallbladder is kept empty by squeezing it at intervals: Two dogs were the subjects. In both cases, the gallbladder showed no changes from normal. We conclude from this that bile salts injected into the portal venous system reach the gallbladder in the bile. This conclusion is confirmed by the statement of Best and Taylor [10] that when bile salts are fed to an animal they can be recovered almost quantitatively from a biliary fistula.

GENERAL COMMENTS

The experimental and clinical data on the bacteriology of the normal and inflamed gallbladder make untenable the common belief that bacterial infection is the usual cause of cholecystitis. We agree with Cole, that: "Infection appears to be a late event, and, presumably, is secondarily imposed upon the damaged gallbladder wall." The evidence in support of the conclusion that cholecystitis is due to chemical action is overwhelming. All writers report practically identical experimental results on the production of cholecystitis by pancreatic juice and by bile salts. These agents produce in the experimental animal effects identical with those observed in man. That pancreatic juice can produce necrosis of the gallbladder in man has been proved. That bile salts can produce similar results in man seems practically certain. A few differences in the effects of these two agents should be noted. Activated pancreatic juice acts on the bile ducts as well as on the gallbladder.[11] The action of bile salts is largely confined to the gallbladder. This is shown by our experimental observations heretofore given. That the extraordinary ability of the gallbladder to absorb water from the bile exposes it, under certain conditions, to the escharotic action of concentrated bile salts seems probable. Note that in our experiments in which bile salts were injected into the portal venous system we observed no change in the liver, though we saw intense inflammation of the gallbladder. Our interpretation of this observation is that the bile salts reach the liver in a concentration too low to damage it and pass into the bile in this concentration; that water is absorbed from this bile by the gallbladder till the concentration of bile salts becomes so great as to damage the gallbladder wall.

We sometimes see acute inflammation or great thickening of a human gallbladder which contains no stones. Human cholecystitis, however, nearly always occurs in gallbladders which contain stones. Cole [9] has shown that partial obstruction of the cystic duct is a chief factor in the production of cholecystitis. This explains the relation of gall stones to the disease. No one can reasonably doubt that repeated chemical inflammation of the gallbladder can thicken its wall.

9. Cole, W. H.; Novak, M. V., and Hughes, E. O.: Experimental Production of Chronic Cholecystitis by Obstructive Lesions of the Cystic Duct, Ann. Surg. **114:** 682, 1941.

10. Best, C. H., and Taylor, N. B.: Physiological Basis of Medical Practice, ed. 3, William Wood & Company, 1939, p. 767 (Bile Salts 90 per Cent).

11. Bisgard, J. D., and Baker, C. P.: Studies Relating to the Pathogenesis of Cholecystitis, Cholelithiasis and Acute Pancreatitis, Ann. Surg. **112:** 1006, 1940.

COMMENTS ON CLINICAL APPLICATIONS

In considering the clinical applications of the data obtained by our four series of experiments, certain questions arise:

1. *Is early operation for acute cholecystitis the proper treatment?* The discussion of this question has been almost endless. We are of the opinion that about equally good results can be obtained by either early or late operation, provided the surgeon uses good judgment on the individual case. Thus, if the inflammation is violent and the symptoms are growing progressively worse, an early operation should be performed to avoid the dangers of perforation of the gallbladder. Our observation that the gallbladder quickly recovers from chemical injury of rather pronounced severity supports the practice of postponing operation on patients whose symptoms are of moderate severity and nonprogressive.

2. *Is the gallbladder ever a focus of infection?* We contend that the removal of a gallbladder which does not show signs of disease on the theory that it is a focus of infection can no longer be justified. The mere presence of bacteria in the gallbladder does not indicate that they are injuring it or any other part of the body. We do not deny—in fact we believe—that a gallbladder injured by chemical action may become infected by bacteria within its lumen or wall.

3. *Is prolonged drainage of the gallbladder or of the common duct in the absence of jaundice in the hope of ridding the liver and biliary system of infection justified?* We do not believe so. The absence of bile from the intestine hinders the digestion of fats and the absorption of fat-soluble vitamins. Even granted that the biliary system is infected, we can see no reason for believing that the diversion of the bile to the exterior will do any more to overcome the infection than will the passage of the infected bile into the intestine.

4. *Is there any danger in opening the gallbladder and removing its contents in performing cholecystectomy?* We do not believe that there is. We also believe that fearing to resort to this procedure often makes cholecystectomy a needlessly dangerous operation. This is especially true when the gallbladder is greatly distended or when adhesions surround the gallbladder and cystic duct. The relations of the cystic duct to the hepatic duct are so variable that good exposure with perfect control of the cystic duct and cystic artery are necessary. These requirements can often be met only by opening the gallbladder widely, preliminary to its removal. We have employed this technic for years without any noticeable ill effects. It often makes cholecystectomy remarkably easy and perfectly safe when without it the reverse would be true. Writers generally agree that cholecystectomy from above downward is much safer than cholecystectomy from below upward. The operation, however, is often bloody and tedious. By emptying the gallbladder, transectiing it at the ampulla and dissecting the ampulla and cystic duct from above downward and the fundus from below upward one obtains all the safety of cholecystectomy from above downward and all the ease of the other procedure.

5. *Should the common bile duct be opened when the tissues around it are edematous or when the head of the pancreas is thickened?* No, because it may have been severely damaged by activated pancreatic juice. Its incision and exploration in this event may cause its rupture or occlusion. Its exploration may prove unnecessary. It can be explored with safety at a second operation if signs of its occlusion persist.

SUMMARY

The preceding facts can be summarized as follows:

1. Infection is seldom the primary cause of cholecystitis.

2. Cholecystitis is nearly always caused by chemical agents which are normal constituents of the body. The evidence shows that two agents—pancreatic juice and bile salts—are the chief offenders. That pancreatic juice can cause cholecystitis in man has been proved. That bile salts can do so is extremely probable.

3. The treatment of cholecystitis should be planned in the light of these facts.

REHABILITATION OF THE TUBERCULOUS IN INDUSTRY

NORVIN C. KIEFER, M.D.
and
HERMAN E. HILLEBOE, M.D.
Surgeon and Medical Director, Respectively, United States Public Health Service
Washington, D. C.

The Tuberculosis Control Division of the U. S. Public Health Service was created in July 1944 with a program embodying four major phases: case finding and diagnosis, adequate medical care, rehabilitation and after-care, and protection of the patient and his family against economic distress. Rehabilitation and after-care must be preceded by adequate diagnostic facilities and proper medical treatment. Unfortunately however there is as yet insufficient realization of the fact that, without rehabilitation and after-care, much or all of the time, effort and money spent on diagnosis and treatment will be wasted. Furthermore it will be difficult to realize effective results from any of these first three objectives unless it is possible coincidentally to assure the patient and his family reasonable protection against economic distress and suffering.

These statements are applicable to the general problem of control of tuberculosis. They are equally pertinent to a complete program of industrial rehabilitation of the tuberculous.

The most valuable contribution to the diagnosis of tuberculosis during the twentieth century has been the increasingly widespread use and realization of the basic necessity of roentgenograms of the chest. In recent years this invaluable method of investigation has been brought within the reach of the majority of the population of this country through the introduction of simplified and inexpensive technical developments. The most significant improvements have been the introduction of high speed 35 and 70 mm. films, 4 by 5 inch films, the Morgan phototimer and the mobile x-ray unit.

From January 1942 to the present time over two million people have had chest x-ray examinations by units of the U. S. Public Health Service in cooperation with state and local health organizations. During the same period the armed forces, industry and state and local health departments and tuberculosis associations have examined over 25 million persons. The great majority of these people have been in the age group 15 to 65 years. These are the years of greatest industrial productivity.

From the Tuberculosis Control Division, U. S. Public Health Service.
Read before the Section on Preventive and Industrial Medicine and Public Health at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 3, 1946.

Of the persons examined by the U. S. Public Health Service 1.2 per cent have shown evidence of reinfection tuberculosis. In other words, in the people who are wage earners or potential wage earners approximately 24,000 cases of reinfection tuberculosis were discovered.

Of equal significance is the distribution of these cases according to the classification of the National Tuberculosis Association. Roughly 70 per cent of this total number were minimal cases, 25 per cent moderately advanced and 5 per cent far advanced. The full importance of this ratio can be better appreciated when it is remembered that, by contrast, admissions to tuberculosis hospitals have consisted of only 10 per cent of minimal cases, about 30 per cent of moderately advanced cases and 60 per cent of far advanced cases. Thus, routine preemployment chest x-rays and mass chest x-ray surveys have resulted in an almost complete reversal of the previous ratio between minimal and far advanced cases. Moreover, the effective utilization of mass radiography also discovers pathologic conditions in the chest other than tuberculosis and consequently is of invaluable aid to the medical profession in general. Gould, in his study "Nontuberculous Lesions Found in Mass X-Ray Surveys"[1] reported that an analysis of 442,252 chest films showed 4,992 cases of nontuberculous pathologic changes, or 1.1 per cent, divided into sixty-six different categories. A large proportion of the abnormalities observed by Gould were not known to the patient before their discovery by x-rays.

It may be assumed therefore that, as a result of these diagnostic procedures, pulmonary tuberculosis is being diagnosed at an earlier stage of the disease, or at a stage when the disease is relatively restricted in extent, or both. It seems logical that in general there should be a resultant improvement in the prognosis for recovery. A further advantage is the possibility of isolation of these people before prolonged contact with their families and associates has resulted in further dissemination of the disease.

Fortunately, both management and labor rapidly are recognizing and acknowledging the importance of these surveys and are cooperating generously. Still more recently, hospitals have been appreciating the necessity of routine x-rays of the chest of all patients admitted, with the realization that this procedure represents valuable protection for the patient, the hospital and the hospital employees.

To supply adequate medical care and hospitalization at the present time in most areas of the country is difficult. It has been estimated that there is a national deficit of approximately 40,000 beds for tuberculous patients. Unquestionably part of this shortage is a result of the scarcity of building materials and labor, but a large part comes from a lack of comprehension of the magnitude of the problem, and lack of a social consciousness of the rights and needs of the unfortunate victims of the disease.

Both management and labor are in an enviable position to combat these deficiencies.[2] They have political influence, financial power and social prestige. The frequently wide divergence of their separate philosophies usually is ample evidence to the general public of the unselfishness of any projects in which the two cooperate equally. The disease is of paramount importance to both of them because in the years of greatest wage earning capacity tuberculosis as a cause of death surpasses all other diseases. Tuberculosis therefore results in a serious loss of manpower in this country every year, and this loss must be borne by both employer and employee.

Industry can encourage, even demand, enlarged hospital facilities. Furthermore, industrial concerns and labor unions are in a position to make substantial financial contributions, contributions which will yield large dividends in the form of saving of human suffering, misery and death. At least until an adequate number of beds in tuberculosis hospitals are available immediately to patients needing them, general hospitals could provide emergency or temporary care for the tuberculous until such a time as they can be transferred to the institutions specializing in the care of the tuberculous.

With the possible exception of large corporations, ownership and management of private sanatoriums for the exclusive use of employees will not be practical. The usefulness of such a venture has been demonstrated by the Metropolitan Life Insurance Company at its Mount McGregor Sanatorium. This institution was started in 1913 for the care of tuberculous employees of the company. It became necessary to increase the original bed capacity of 200 to 350. By 1945 only 26 beds were occupied—26 cases of tuberculosis under treatment out of a total of 50,000 employees. The census was so small that to close the institution was the most economical course.

Before considering various phases of the rehabilitation of the tuberculous in industry, it is necessary to understand clearly what constitutes rehabilitation. In March 1946 the Office of Vocational Rehabilitation, the National Tuberculosis Association and the Tuberculosis Control Division of the U. S. Public Health Service sponsored a conference on rehabilitation of the tuberculous. The following definition, an adaptation of that of the National Council of Rehabilitation, was adopted: Rehabilitation in tuberculosis is the restoration of tuberculous persons to the fullest physical, mental, social, vocational and economic usefulness of which they are capable. Vocational rehabilitation, which is only one phase of the complete process of rehabilitation, was defined as meaning any services necessary to render a tuberculous person fit to engage in an occupation suitable to health and aptitude. This is an adaptation of the definition embodied in Public Law 110, the Vocational Rehabilitation Act passed in 1943.

With few exceptions, rehabilitation of the tuberculous occupies a unique position in the general field of rehabilitation because throughout the life of a tuberculous person there is a perpetual threat of relapse. The presence of the tubercle bacillus is an acknowledged condition of the development of the disease; the importance of adverse social, environmental and hygienic factors as well as psychologic disturbances, although recognized, is not clearly understood. There is an increasing tendency to regard these intangible factors as being of paramount importance in either the original onset of the disease or in subsequent relapses. For the present, at least, the only safe attitude toward these factors is that of acknowledging that they may be of basic importance and that they therefore must be duly respected and considered in the treatment of the disease.

1. Gould, D. M.: Nontuberculous Lesions Found in Mass X-Ray Surveys, J. A. M. A. **127**: 753-756 (March 31) 1945.
2. Hilleboe, H. E., and Kiefer, N. C.: Rehabilitation and After Care in Tuberculosis: I. General Problems, Pub. Health Rep. **61**: 285-294 (March 1) 1946.

A number of studies indicate that the tuberculous ex-patient is a satisfactory employee. Any increased absenteeism attributable to illness and the necessity for special attention to even minor complaints is equalized by a decrease in absenteeism that results from nonmedical causes. A rather common experience of employers is that the tuberculous ex-patient is more loyal than the average well employee. Whether this is a consequence of gratitude for having received employment, of fear of losing a job or other factors is irrelevant.

It does not seem unfair, therefore, to believe that an employer is obligated to reinstate any former employee who has recovered sufficiently from tuberculosis. This statement remains true even when, at first, the ex-patient and ex-employee is able to start at only four hours' work per day and may have to be placed at work which is more suitable to his physical limitations. Even these disadvantages may be more than compensated by the broadening of the scope of activities of the Office of Vocational Rehabilitation. Many of these employees, as a result of insanatorium and early postsanatorium instruction and training, will return to their jobs better qualified and more productive than they were before the onset of the disease.

A further necessity will be that of cooperation of industry in a general program of employment of all tuberculous ex-patients. Some of the younger patients will have developed tuberculosis before they ever had a job; others will have worked in plants where all of the jobs involve physical exertion to an extent which is unsafe for these people. Labor and management must cooperate in offering suitable work placement for these persons even when they are not former employees.

It may be argued that to acknowledge such obligations is to grant special privileges to those who have recovered from tuberculosis. But is the victim of the disease the only person who gains from such an arrangement? If this person is unemployed, our social code does not permit us to allow him to starve to death, although too frequently this nearly happens. He and his family must be supported by public money—and this money is raised by taxation. In the meantime, however, this same person, dependent on charity, with little self respect, with resentment toward society, with an environment conducive to repeated breakdowns, presents a constant threat of attacks of tuberculosis to himself, to his family and to every one with whom he may come in contact. There are, therefore, strong and purely selfish reasons why management and labor should be prepared to make actual sacrifices in order to give these people any necessary privileges in obtaining jobs.

It is true that some of these people can be employed in tuberculosis sanatoriums, but these possibilities are limited both as to the number of vacancies and as to the variety of occupations. Sheltered workshops have done admirable work, but they are expensive to operate, can accommodate only a small fraction of the persons needing such benefits and are extremely limited in the types of occupations which they offer. Such projects seem destined to serve mainly as an intermediate step between sanatorium and industrial employment and as permanent shelter for those who are too badly incapacitated for gainful employment in usual places. With a few notable exceptions, homebound employment should be reserved for only those patients who are so incapacitated as to be unable to resume even partially a normal role in the working world.

There are many patients who persistently raise sputum which contains tubercle bacilli. They may have this status for years or throughout life, neither improving nor becoming worse. Many of them are capable of working eight hours daily. Permanent domiciliary care will not be accepted by most of them, and even if provided it would be at the expense of neglecting the hospitalization of early cases of tuberculosis.

There is no entirely satisfactory answer to this problem. The most persuasive one, however, would seem to be the establishing of separate departments in industry for them. There they could work with fellow employees who were similarly afflicted. It is true that out of working hours they can expose not only their own immediate families but also the general public. But they will do this whether they are employed or not. It has previously been stated that permanent domiciliary care for all these people is impossible and inpracticable. It seems reasonable that proper instructions in personal hygiene in the sanatorium, followed by the increased consciousness of social indebtedness which should come from restoration to a normal social and economic status, should minimize the importance of this objection.

In some instances one barrier to employment of tuberculous ex-patients has been the fear on the part of employers of incurring liability for any subsequent relapse which might be experienced by the former patient. Removal of this barrier can be accomplished by the coordinated effort of management, labor, employers' liability insurance companies and workmen's compensation boards. These groups should be convinced that work which has been properly selected and approved is of minor or no importance, per se, in subsequent relapses of the disease. There is also a need among these four groups to recognize that a sympathetic and sentimental decision in favor of one employee may be the reason for denying help to hundreds of others who are dismissed from or denied employment.

Observance of the foregoing principles should result in the great majority of tuberculous ex-patients obtaining profitable work. Between the time of diagnosis and the time of reemployment on a full time basis there is an average lapse of six months to two years. During this time the patient has no income whatever. It seems likely that before long practically all tuberculous patients will be furnished with medical care and hospitalization without charge and without application of any type of means test. This is a step of major importance—but it does not supply food, shelter, clothing or other necessities to the patient's family. Most industrial sickness insurance policies pay only a fraction of the employee's average earnings and that for only a limited time, commonly three to four months. The lowering of economic status of the dependents of a tuberculous man has serious and far reaching potential results. Undesirable and inadequate living conditions increase the hazard of further cases of tuberculosis in the household which has already been intimately exposed to the tubercle bacillus. Frequently the mother is forced to obtain employment and thereby neglect her duties to her children. The effects of the disease, direct or indirect, are thus perpetuated into at least one succeeding generation.

It is true that there are both official and voluntary sources of assistance for such persons. Too frequently these are inadequate or are not made available at all. Such conditions present a real challenge to humanitarian labor unions as well as to private industry.

Management and organized labor must not in this matter of rehabilitation linger behind in time or action but must advance with the age and meet its demands with intelligence, enthusiasm and sympathy. The future of the control of tuberculosis in the United States depends in large measure on unity of effort, unselfish support and positive planned action. Little can be achieved in the rehabilitation of the tuberculous in the United States without the cooperative effort of management and labor.

STREPTOMYCIN IN THE TREATMENT OF SUBACUTE BACTERIAL ENDOCARDITIS

Report of Three Cases

WALTER S. PRIEST, M.D.
and
CHARLES J. MC GEE, M.D.
Chicago

In the treatment of subacute bacterial endocarditis with penicillin [1] four organisms were encountered which were highly or completely resistant to penicillin. One of these, Hemophilus parainfluenzae, was encountered before streptomycin was available. Negative cultures of blood could not be obtained after many weeks of penicillin therapy in daily dosage up to 2,000,000 units. The organism was not inhibited in vitro by any concentration of penicillin which it was possible to obtain in vivo. It was inhibited in vitro by therapeutic concentrations of sulfamerazine, yet negative cultures of blood could not be obtained by the use of sulfamerazine therapy alone. Cure resulted from the combined administration of penicillin in daily dosage of 500,000 to 1,000,000 units and sulfamerazine in dosage to give a level in the blood of 0.8 to 11 mg. per cubic centimeter. The patient, a boy of 8, is alive and engaged in normal activity at school twelve months after completing the combined therapy. The organism in his case was subsequently found to be sensitive in vitro to streptomycin, which indicated that this drug would have been equally effective. Since organisms of the influenzae group have been found to be sensitive to streptomycin it is suggested that streptomycin is the drug of choice when dealing with the rare case of subacute bacterial endocarditis caused by Hemophilus influenzae, H. parainfluenzae or other gram-negative bacteria.

Organisms from the other 3 patients were streptococci. In case 1 considerable pleomorphism was present in young cultures, and what appeared to be the earliest and most pleomorphic forms were gram-negative, while the older forms which appeared as pairs and short chains of cocci were gram-positive. Good growth occurred under aerobic conditions in various broths, and subcultures on blood agar produced tiny white nonhemolytic colonies. After a few days a faint green color appeared. When the culture was revived after it had been frozen for several weeks, it grew on blood agar as a typical Streptococcus viridans with a green hemolytic zone. Acid and gas were not produced in any of the sugars. Gelatin was liquefied. Growth of the organism was inhibited in vitro by a penicillin concentration of 0.8 unit per cubic centimeter, yet consistently negative cultures of blood could not be obtained in vivo with penicillin during five weeks of daily dosage of 500,000 units, six weeks of 1,000,000 units and four weeks of 1,500,000 to 2,000,000 units. The latter doses produced serum penicillin levels of 2 units per cubic centimeter. This organism (S. viridans) was inhibited in vitro by a streptomycin concentration of 0.1 unit per cubic centimeter. Streptomycin was not available until five days before the death of the patient. During this period he received 500,000 units (0.5 Gm.) per day by intramuscular injections made every two hours. Inasmuch as a positive culture of blood was obtained just before the start of treatment with streptomycin, while at autopsy no bacteria could be found in the scattered remnants of fibrin which were present on the valves involved, it is suggested that a cure might have been obtained had streptomycin therapy been used from the outset. Serum streptomycin levels of 3 to 12 units per cubic centimeter were obtained by the administration of 40,000 units of the drug every two hours intramuscularly. These levels are 30 to 120 times the in vitro sensitivity of the organism to streptomycin, while the serum penicillin level obtained with 1,500,000 units of that drug was only two and one half times the in vitro sensitivity of the organism to penicillin. In treating subacute bacterial endocarditis with penicillin the highest percentage of cures has been obtained, in our experience, when the serum level is 100 or more times the in vitro sensitivity of the organism to the drug.

The causative organisms in cases 2 and 3 appeared to be the same. Both grew aerobically as gram-positive cocci in pairs and short chains in any broth medium as well as on plain and blood agar and could be recovered from the patients' blood in broth and in the poured agar plates. On the latter the colonies were small, discrete, white, oval in shape and without hemolytic zones or green color in young or old cultures or after they had been frozen. Acid but no fermentation was produced in lactose, dextrose, maltose, sucrose and mannitol. Gelatin was not liquefied. Bromcresol purple milk was alkaline. During the course of treatment in case 3, several abscessed teeth were extracted, from one of which an organism having the same characteristics was recovered in pure culture. Growth of the organism in case 2 was inhibited in vitro by a penicillin concentration of 4 units per cubic centimeter, that in case 3 by 6 units per cubic centimeter. A streptomycin concentration of 1 unit per cubic centimeter inhibited the growth of both organisms in vitro. A negative culture of blood could not be obtained in case 2 with serum penicillin concentrations ranging from 2 to 64 units per cubic centimeter (500,000 units per day) over a period of seven weeks. The high level (64 units) was obtained during a period of renal insufficiency. Five hundred thousand units per day of streptomycin gave a serum level of 6 to 12 units per cubic centimeter. After twenty-one days on this dosage, at which time a negative culture was obtained, clinical improvement resulted. At this point the supply of streptomycin was exhausted, and the patient was put back on a regimen of 2,000,000 units of penicillin per day administered by continuous intravenous drip. This

From the Department of Medicine, Wesley Memorial Hospital.

1. Priest, W. S.; Smith, J. M., and McGee, C. J.: Penicillin Therapy of Subacute Bacterial Endocarditis. The End Results in Thirty-Four Cases, Arch. Int. Med., to be published.

produced a serum level of over 64 units per cubic centimeter, owing to chronic mild renal insufficiency. Treatment was continued for six weeks; the cultures of blood remained negative during this time and for sixteen days thereafter. Clinical improvement continued. Two days later the culture of blood was positive, and after another two days, pulmonary embolism occurred. Subsequently one negative and one positive culture were obtained, and the patient was discharged as a therapeutic failure. However, he went on to recovery without further treatment and is alive and engaging in approximately 50 per cent normal activity without signs of cardiac insufficiency nine months after the cessation of treatment. Frequent cultures of blood have been negative; sedimentation rates and blood counts have been within normal limits. While recovery in this case cannot absolutely be attributed to streptomycin, the fact that clinical improvement did not begin and a negative culture of blood was not obtained until after three weeks of streptomycin therapy suggests that this drug was an important, if not the decisive, factor in recovery. Perhaps some physiologic change was brought about which made the organism subsequently more sensitive in vivo to penicillin. Also, in view of the two subsequent positive cultures of blood, there is no proof that treatment with penicillin was of benefit following the use of streptomycin. The two final positive cultures may have resulted from minute foci in the valvar lesion which the local mechanism of healing was later able to overcome.

Twenty-eight days of penicillin therapy at 1,000,000 units per day and nine days at 2,000,000 units per day failed to produce negative cultures of blood in case 3, and the patient went steadily downhill. Streptomycin, 500,000 units (0.5 Gm.) per day, given by interrupted intramuscular injection every three hours resulted in negative cultures of blood within forty-eight hours. Clinical improvement was prompt and striking. The serum streptomycin level ranged from 3 to 12 units per cubic centimeter. After eleven days the daily dose was reduced to 200,000 units for forty-five days. During this period the sedimentation rate rose; toward its close the patient did not appear so well, and the daily dose was increased to 400,000 units for seventeen days. During the entire seventy-three days of streptomycin administration seventeen negative and no positive cultures of blood were obtained. The patient is alive and working six months after the conclusion of treatment. Eighteen cultures of blood have been negative, the sedimentation rates and blood counts have been within normal limits. Cure in this patient can undoubtedly be attributed to streptomycin.

REPORT OF CASES

CASE 1.—*First Admission.*—A man aged 36 was seen at St. Luke's Hospital, through the courtesy of Dr. Faris F. Chesley. The patient had rheumatic fever at the age of 12. He passed the Army physical examination at 18. The onset of malaise, anorexia, anuria, nausea, pain in both shoulders and in the right knee occurred Jan. 28, 1945. Sulfonamides and salicylates were administered without effect. The patient was admitted to the hospital Feb. 5, 1945. The temperature was 103.2 F., the pulse rate 96, the blood pressure 106 systolic and 50 diastolic, and the respiratory rate 28. He was acutely ill and had severe dyspnea. The heart was enlarged downward and to the left. A loud crescendo blow was heard best at the apex and transmitted in all directions. The spleen was enlarged. There were no petechiae. The number of white blood cells was 12,500, and the sedimentation rate was 20. Four cultures of blood were negative. The patient had several severe chills with the temperature rising to 104 F. Penicillin, 20,000 units every two hours, administered intramuscularly for sixteen days resulted in apparent cure. The patient was discharged on March 20, 1945.

Second Admission.—He was readmitted on April 19, 1945 with the same symptoms as he had on first admission. The physical observations were unchanged. In addition, two cultures of blood were positive. Penicillin and streptomycin therapy were undertaken as outlined previously. Heparin, 300 mg. per day for thirty-three days, failed to produce a coagulation time over fifteen minutes. From the ninety-fifth to the one hundred thirty-fifth hospital day the patient seemed to hold his own, but cultures of blood were positive, the sedimentation rate and the number of white blood cells remained elevated, and arteriovenous aneurysm of the left popliteal vessels developed subsequent to an embolism of the artery. From the one hundred thirty-fifth day onward the course was steadily downhill, and four embolic episodes occurred; cardiac failure developed on the one hundred eighty-ninth day, and death occurred on the two hundred and tenth hospital day. Four weeks before death a single dose of 300 mg. of Dicumarol (3,3'-methylene-bis-[4-hydroxycoumarin]) resulted in a clotting power of 2.7 per cent of normal. Four days before death 100 mg. of the drug produced a clotting power of 5 per cent of normal.

Autopsy.—At autopsy the heart weighed 650 Gm. There was evidence of fibrinous pericarditis, and multiple petechial myocardial hemorrhages were present. The aortic valve ring was fixed, scarred, calcified and reduced to a slit 1.5 by 0.3 cm. The cusps of the right and left valve were almost completely replaced by firm verrucous and calcified lesions apparently covered by endocardium. In addition there were large fibrinous and fibrous, firm, well attached polypoid masses on the valvar surface. The mitral valve ring was stenosed, the valve cusps decidedly thickened. One ulcerated area covered by minute hemorrhagic elevations was present. Microscopically the aortic valve consisted of a mass of hyalinized fibrous tissue with numerous accumulations of blood pigment and pronounced calcification. The surface was frayed, and small scattered areas of bacteria-free fibrin were present. The calcific process extended into the adjacent myocardium. The ulcer of the mitral valve displayed small areas of bacteria-free fibrin.

CASE 2.[1a]—The patient, a man aged 55, had a transurethral resection for benign prostatic hypertrophy in December 1944. After this operation he did not feel well, and about March 15, 1945 he had a "lung infection." He was readmitted to the hospital and given 10,000 units of penicillin intramuscularly every three hours for five days; sulfathiazole 2.5 Gm. five times a day for two weeks; a combination of these two drugs for eight days, and a total of 1,000,000 units of penicillin by interrupted intramuscular injection during the next two weeks. He failed to improve and during the succeeding four months had fever, severe chills, anorexia, a 45 pound (20 Kg.) loss of weight, pronounced dyspnea, swelling and pain of the ankles. In the latter part of June 1945 a positive culture of blood was obtained, and he was admitted to Wesley Memorial Hospital June 27, 1945. The temperature was 100.4 F., the pulse rate 84, the respiratory rate 20 and the blood pressure 130 systolic and 75 diastolic. He was chronically ill and appreciably emaciated. The heart was not enlarged. A loud musical murmur was heard at the apex. Additional observations were a palpable liver, clubbing of the fingers, definite edema of the ankles, petechiae of the legs, pulmonary congestion and moderate cyanosis. The spleen was not palpable. Urinalysis disclosed 10 mg. of albumin per hundred cubic centimeters, 30 to 45 leukocytes per high power field. Examination of the blood disclosed: erythrocytes 2,810,000; hemoglobin content 7.5 Gm. per hundred cubic centimeters, and leukocytes 8,100 with a differential count of 83 per cent polymorphonuclears. The sulfobromophthalein test resulted in 16 per cent retention in forty-five minutes. There was poor renal concentration. The phenolsulfonphthalein test

1a. In case 2 the streptomycin was furnished by Commercial Solvents Corporation, 17 East Forty-Second Street, New York, N. Y.

gave 35 per cent excretion in one hour. The electrocardiogram was not diagnostic. A roentgenogram of the chest revealed normal conditions. The bacteriologic studies, clinical course and treatment of this patient have already been described.

CASE 3.[2]—The patient was a man aged 42. He had rheumatic fever resulting in a mitral murmur at the age of 18. A simple cold developed in May 1945, from which he did not recover. From May until his admission to Wesley Hospital on Sept. 13, 1945, gradually increasing symptoms of malaise, chills, cough, night sweats, weakness, dyspnea, muscular cramps and loss of weight were present. In June 1945 he was told he had secondary anemia, albuminuria and myocardial damage, but cultures of the blood were not made. On admission, the temperature ranged to 103 F., the pulse rate to 96 and the respiratory rate to 24. The blood pressure was 112 systolic and 68 diastolic. The weight was 105 pounds (48 Kg.). The heart was enlarged; its contour was mitral. A loud harsh systolic murmur and a softer middiastolic murmur were heard at the apex. The liver and spleen were palpable. Petechiae were present on the legs. Urinalysis disclosed 10 mg. of albumin per hundred cubic centimeters. Examination of the blood revealed: erythrocytes 3,150,000; hemoglobin 9 Gm. per hundred cubic centimeters; leukocytes 6,200, and sedimentation rate 45. Roentgenograms of the teeth showed several root fragments with abscesses. Cultures of the blood were positive. The bacteriologic studies, therapy and clinical course of this patient have been described previously.

SUMMARY

Occasionally a case of subacute bacterial endocarditis may be encountered in which the organism is a gram-negative rod insensitive to penicillin. Although a cure may be obtained by the combined use of penicillin and sulfonamides as was true in the boy of 8 whose recovery is recounted, streptomycin should be the drug of first choice when dealing with such organisms.

Strains of streptococci which are highly insensitive to penicillin may be encountered more frequently. These may be relatively sensitive to streptomycin. Three such organisms were encountered in cultures from a group of 34 patients. One was typically Streptococcus viridans after freezing, but was rather atypical in primary cultures of blood. The other two were typical nonhemolytic streptococci. In vitro sensitivity to penicillin ranged from 0.8 to 6 units per cubic centimeter. Sensitivity to streptomycin ranged from 0.1 to 1 unit per cubic centimeter. Streptomycin apparently produced sterilization of the valvar lesions in case 1, resulted in negative cultures of blood after penicillin therapy had failed in case 2 and was solely responsible for the cure obtained in case 3.

The dose of streptomycin used, 500,000 units (0.5 Gm.) per day, is not necessarily that which will be adequate in all cases in which the use of the drug is indicated. In the 3 cases here reported, serum streptomycin levels of 3 to 12 units per cubic centimeter were obtained.

2. In case 3 the streptomycin was furnished by Schenley Laboratories, Inc., Lawrenceburg, Ind.

William Hunter's Entrance Into the World of Affairs.—William Hunter came up from Scotland to London in 1740, at the age of 22, to embark on his chosen career of medical science. After six years in town, while he was yet in his twenties, he considered himself sufficiently well versed in the art of anatomy to start to instruct others. Yet even earlier than this he had begun to contemplate his own field as related to a philosophy which included political as well as physiological phenomena among its materials.—Oppenheimer, Jane M.: New Aspects of John and William Hunter, New York, Henry Schuman, 1946.

NITROGEN MUSTARD THERAPY

Use of Methyl-Bis(Beta-Chloroethyl)amine Hydrochloride and Tris(Beta-Chloroethyl)amine Hydrochloride for Hodgkin's Disease, Lymphosarcoma, Leukemia and Certain Allied and Miscellaneous Disorders

LOUIS S. GOODMAN, M.D., Salt Lake City
MAXWELL M. WINTROBE, M.D., Salt Lake City
WILLIAM DAMESHEK, M.D., Boston
MORTON J. GOODMAN, M.D., Portland, Ore.
MAJOR ALFRED GILMAN
Medical Corps, Army of the United States
and
MARGARET T. McLENNAN, M.D., Salt Lake City

In a recent report the historical aspects of the use of β-chloroethyl amines (halogenated alkyl amines, nitrogen mustards) in the treatment of certain diseases of the blood-forming organs were presented and the chemical, pharmacologic, toxicologic and animal experimental aspects of these compounds reviewed.[1] The interested reader is referred to that report for orientation.

The present preliminary communication concerns the clinical use of halogenated alkyl amines in the treatment of lymphosarcoma, Hodgkin's disease, leukemia and a limited number of allied and miscellaneous disorders. In all, 67 patients have been studied. These include 7 patients[2] treated by L. S. Goodman and Alfred Gilman at the New Haven Hospital; 34 patients treated by M. M. Wintrobe and Margaret T. McLennan at the Salt Lake County General Hospital; 16 patients treated by William Dameshek, Boston, and 10 patients treated by M. J. Goodman, Portland, Ore. The types of diseases treated are shown in the accompanying table. The youngest patient was 3 years of age and the oldest 76. The sexes were approximately equally represented in the series. Twenty-six of the 67 patients are still alive and under observation or therapy.

No attempt will be made at this time to analyze statistically the results obtained or to compare them with those observed after roentgen irradiation. The reasons for this are (1) the small number of patients in the series, (2) the prior use of radiation treatment for most patients, (3) the terminal nature and radiation refractory character of the disease in the majority of cases and (4) the small number of patients in the early stage of their disease. Rather, our purposes in this report are mainly to summarize briefly the clinical experiences obtained and to present the considered opinions of the various investigators concerned as to the status and the potential value of the β-chloroethylamines in the syndromes enumerated. In subsequent more complete communications, comparison with the results of radiation therapy will be made and detailed hematologic and pathologic data will be presented.

The Jane Coffin Childs Fund for Medical Research, Yale University, defrayed part of the expenses of this investigation.

The chemicals employed in this study were generously supplied by Dr. Milton C. Winternitz, Chairman, Committee on the Treatment of Gas Casualties.

Reports of several of the investigations referred to either have not been published or have not been recorded in the open literature. The date given is the year in which the work was carried out.

Dr. L. S. Goodman, Dr. Wintrobe and Dr. McLennan are from the University of Utah School of Medicine; Dr. Dameshek is from Tufts College Medical School; Dr. Morton J. Goodman is from the University of Oregon Medical School, and Major Gilman is from the Medical Research Division, Edgewood Arsenal.

The following physicians have generously cooperated in providing cases for study: Drs. Gustaf E. Lindskog, Grover F. Powers, Francis G. Blake, G. G. Richards, M. J. Taylor and L. A. Wheelwright.

1. Gilman, A., and Philips, F. S.: The Biological Actions and Therapeutic Applications of the B-Chloroethyl Amines and Sulfides, Science **103**: 409-415, 1946.

2. Gilman, A.; Goodman, L. S.; Philips, F. S., and Dougherty, T., 1943.

CHEMISTRY AND DOSAGE

The chemistry and the pharmacodynamics of the nitrogen mustards and particularly of the two compounds employed in this study have been described recently.[1] The water soluble hydrochloride salts of the *tris*(β-chloroethyl)amine and methyl-*bis*(β-chloroethyl)amine were injected intravenously. The doses of the two were the same.

The standard single dose of 0.1 mg. per kilogram of body weight was injected daily or every second day until three to six doses were administered, but the single dose never exceeded 8 mg. This was considered to represent the initial treatment required to induce remissions in suitable cases. In an occasional very ill patient the single dose was reduced to 0.05 mg. per kilogram. Subsequent treatment varied with each patient, depending on the clinical response, the hemopoietic status, the duration and completeness of remission and the like. As a rule an additional dose of nitrogen mustard was not given oftener than every six to eight weeks, and subsequent treatments usually consisted of but two to four doses.

METHOD AND TECHNIC OF ADMINISTRATION

The nitrogen mustards must be administered only by the intravenous route, great caution being observed to prevent extravasation of the solution. The solution was freshly made by adding 0.9 per cent sterile aqueous sodium chloride solution to sterile glass bottles each containing exactly 10 mg. of the dry salt. Injection was accomplished within five minutes after preparation of the solution, because of the rapid hydrolysis which may occur, with consequent loss of efficacy. In the majortiy of the 20 patients receiving *tris*(β-chloroethyl)amine hydrochloride the direct syringe method was employed, the dose being contained in 25 to 50 cc. of saline solution. Pain during injection and subsequent thrombophlebitis of the injected vein were frequent with this technic. In all other cases 10 mg. of the drug was dissolved in 10 cc. of saline solution (1 mg. per cubic centimeter), and the calculated dose was injected into the rubber tubing during the course of an intravenous infusion of glucose or saline solution, special attention being given to assure free and rapid flow of the infusion and rapid injection of the nitrogen mustard solution. Considerable caution was exercised to prevent the solution from touching the skin or mucous membranes of the patient or physician. All patients were hospitalized, no ambulatory therapy being attempted.

CLINICAL RESULTS AND REPORT OF CASES

Hodgkin's Disease.—Twenty-seven patients with this disease, verified pathologically by biopsy, were treated with nitrogen mustard, 22 with methyl-*bis*(β-chloroethyl)amine hydrochloride and 5 with *tris*(β-chloroethyl)amine hydrochloride. All but 3 had previously had radiation therapy. The majority were in the advanced or terminal stage of their illness and also were considered resistant to roentgen irradiation. In nearly every case some benefit was obtained from chemotherapy. Indeed, the clinical results were sometimes dramatic. Whether the halogenated alkyl amines are superior to radiation treatment cannot be stated at this time, but sufficient experience has been obtained to permit the conclusion that remissions may be induced in patients whose disease no longer responds to roentgen irradiation. In fact, in 3 patients sensitivity to irradiation may have been restored after a course of nitrogen mustard. In 1 patient who had Hodgkin's disease for seven years and who was still responsive to radiation therapy a more satisfactory remission was obtained from nitrogen mustard than from any previous course of radiation treatment. In another patient who did not respond adequately either to radiation therapy or to halogenated alkyl amine therapy alone, good results were obtained by combining the two agents.

In addition to rapid partial or complete disappearance of Hodgkin's tumor masses, most patients experienced improvement in appetite, weight, strength and sense of well-being; fever, if present, disappeared. A number of persons were able to return to work. Symptom free remissions varying from two weeks to at least seven months have been observed.

The following abbreviated case report serves to illustrate a dramatic remission induced by therapy with the *tris*(β-chloroethyl)amine hydrochloride in a radiation refractory case of terminal Hodgkin's disease.

CASE 1.—L. W., a woman aged 33, a housewife, was first seen in 1941 because of axillary lymphadenopathy, and biopsy revealed Hodgkin's disease. Her father had died of Hodgkin's disease, her mother of polycythemia. In rapid succession nodes appeared in the axillas, the neck and the mediastinum. X-ray therapy was given with initial excellent but with subsequent poorer results. In the summer of 1942 dyspnea and cough developed, and thoracentesis was required for pleural effusion. Complete motor and sensory paralysis of the right arm appeared in the spring of 1943, and the limb gradually increased threefold in size. Cough, weakness and dyspnea became worse, lymph node masses increased, and in the fall of 1943 the patient was bedridden and failed to respond to further x-ray treatment.

Distribution by Disease of Cases in Which Nitrogen Mustard Therapy Was Used

Hodgkin's disease	27
Lymphosarcoma	13
Chronic myelocytic leukemia	7
Acute and subacute myeloblastic leukemia	4
Chronic lymphocytic leukemia	5
Subacute lymphoblastic leukemia	3
Miscellaneous diseases *	8
Total	67

* Melanosarcoma (2), undiagnosed retroperitoneal mass, undiagnosed tumor (probably Hodgkin's disease), reticuloendotheliosis, metastatic mammary carcinoma, metastatic cervical carcinoma and giant follicular lymphoma.

On admission to the hospital in December 1943 the patient was extremely ill and very cyanotic, with a shallow dry cough and gasping respiration. The face and neck were greatly swollen and distorted, and the left side of the neck bulged with a hard irregular mass extending into the supraclavicular fossa. There was pitting edema over the upper thorax. Both axillas were occupied by hard irregular masses of nodes, extending on the right side to the lower chest wall. The percussion note was dull to flat over both thoraces, and breath sounds were diminished. The breasts were large and edematous. The right arm was greatly swollen and completely paralyzed. There was no enlargement of the spleen or liver and no inguinal lymphadenopathy.

Roentgen examination disclosed no mediastinal mass, but decided infiltration of the lower two thirds of both lungs was present. Blood values were not remarkable except for a mild eosinophilia and a total absence of lymphocytes. The temperature ranged from 98 to 103 F. and the pulse from 100 to 140.

Treatment consisted of four doses of *tris*(β-chloroethyl)amine hydrochloride, 0.1 mg. per kilogram of body weight every other day, given intravenously by the direct syringe method. Improvement started after the second dose and continued over a period of two weeks. The patient felt much better, the fever and cyanosis disappeared, the dyspnea and cough improved,

the lymph node masses shrank 60 to 75 per cent, the breasts became much smaller, the disfiguring edema of the face and neck entirely receded, and the hugely swollen right arm returned almost to normal size. Roentgenograms of the chest revealed no change in the pulmonary infiltration. Treatment was well tolerated and only minimal blood changes occurred (a slight reduction in the hemoglobin content and red blood cell count, a moderate decrease in the number of white blood cells).

The dramatic therapeutic remission persisted until it was interrupted at the end of four weeks by a sudden severe attack of pulmonary edema which quickly resulted in death. Postmortem examination was not obtained.

Lymphosarcoma.—Thirteen patients with lymphosarcoma were treated with nitrogen mustard, 5 with *tris*(β-chloroethyl)amine hydrochloride and 8 with methyl-*bis*(β-chloroethyl)amine hydrochloride. Most of the cases were terminal. In all but 4, prior radiation therapy had been given. Of the patients who had received such treatment, nearly all had reached the radiation resistant stage of their disease.

The clinical results observed were qualitatively similar to those previously described for Hodgkin's disease but were more frequently unsuccessful. Therapeutic remissions, when obtained, lasted from three weeks to several months; but with each recurrence renewed therapy seemed to be less and less effective, and the remissions became shorter. At least 5 complete failures were encountered without obvious explanation for the lack of satisfactory response. It was impossible to predict beforehand which patients would or would not respond satisfactorily. This was likewise the experience with the nitrogen mustard therapy of experimental lymphosarcoma in mice,[3] in which syndrome it was also observed that the tumor cells became more resistant to the chemicals with successive courses of treatment.

Fig. 1 (case 2).—Appearance in terminal lymphosarcoma in the radiation resistant stage four days after initiation of *tris*(β-chloroethyl)amine hydrochloride therapy. Improvement in well-being, strength, appetite and temperature but no visible change in size of tumor masses.

Dramatic results against lymphosarcoma in the terminal stages were observed in several patients near death. In 1 patient, sensitivity to radiation was restored by halogenated alkyl amine therapy. As was also true for Hodgkin's disease, satisfactory responses were obtained even in radiation resistant patients. In addition to definite reduction or complete clinical disappearance of lymphosarcoma masses and the signs and symptoms attributable thereto, the therapeutically induced remissions frequently were associated with an improvement in appetite, strength and weight and with reduction of fever and a sense of well-being.

The following brief case report serves to illustrate the salutary effect of β-chloroethylamine therapy in terminal lymphosarcoma which had become refractory to radiation. The case is of further interest because it is the first in which nitrogen mustard therapy was employed and also because it illustrates the severe toxic effects which excessive dosage produces.

CASE 2.—J. D., a man aged 48, a silversmith, entered the hospital [4] in August 1942 in the terminal stages of lymphosarcoma. He had been seen first in January 1941 complaining of pain and swelling due to a mass on the right side of the neck. Physical examinations and biopsy revealed lymphosarcoma, primary in the tonsil. Radiation therapy was instituted in March 1941 with considerable reduction in the tumor mass. Palliative local resection was performed in June 1941. The patient remained well until December 1941, when masses appeared on both sides of the neck. A second course of x-ray therapy gave relief, but by May 1942 a rapid enlargement and spread of the tumor masses had occurred, the axilla, mediastinum, face and submental region being involved. Additional therapy was given almost continuously, but the masses increased in size.

Physical examination revealed the aforementioned tumor masses (fig. 1), cyanosis, venous dilatation and edema of the face and the upper part of the chest, anisocoria and paresis of the right facial nerve. Chewing and swallowing had become almost impossible, and the axillary nodes prevented adduction of the arms. The spleen and liver were not enlarged. The patient was severely orthopneic, and a tracheotomy set was kept close at hand for immediate use. The results of laboratory examinations were not remarkable, and the blood picture was within normal limits.

Ten consecutive daily doses of *tris*(β-chloroethyl)amine hydrochloride were injected intravenously by the direct syringe method, 0.1 mg. per kilogram of body weight per dose. (This dosage, subsequently found to be too large, was arrived at on the basis of results obtained in experimental lymphosarcoma in mice.) [3] On the fourth day of treatment the patient felt better, was able to swallow and could sleep lying down. By the tenth and last day of treatment the cervical masses were no longer palpable, and the axillary masses receded completely four days later (fig. 2). All signs and symptoms due to the disease disappeared.

Tumor masses recurred after one month, and a second course of treatment (three consecutive daily doses) was given. Improvement was transitory and a third course (six consecutive daily doses) was administered three weeks later without sustained benefit. However, at the time of death, three months after the start of therapy and three weeks after the third course of chemotherapy was completed, the tumor masses were relatively small. Death was hastened by the untoward effects of the drug on the bone marrow, especially thrombopenia.

The panmyelopathy caused by the first course of the drug may serve to illustrate the toxic potentialities of the nitrogen mustards.[5] The earliest action was observed on the circulating lymphocytes, which disappeared completely by the time of the fifth daily dose and then slowly returned. The total white blood cell count fell gradually and progressively from the time of the first daily injection until a low of 200 cells per cubic millimeter was reached (despite two blood transfusions) one month after the initiation of therapy, at which time the differential count indicated 52 per cent lymphocytes, 4 per cent monocytes, 12 per cent eosinophils and 32 per cent neutrophilic granulocytes. The total leukocyte count returned to pretreatment values over a three week period. Despite the leukocyte picture, the clinical signs and symptoms of agranulocytosis were absent except for moderate fever. Thrombocytopenia was most pronounced (22,000 platelets per cubic millimeter) at the height of the leukopenia and was accompanied with gingivitis, periodontitis and cutaneous purpura. The platelets rose to normal

3. Dougherty, T.; Gilman, A., and Goodman, L. S., 1942. Unpublished observations.

4. Dr. Gustaf E. Lindskog, Department of Surgery, Yale University School of Medicine, gave the authors permission to study and report this case.

5. A complete description of this case has appeared elsewhere.[3]

values over a three week period. At no time was anemia more than moderate. The red blood cell count did not decline until the first course of therapy was completed and the lowest values (red blood cells 3.28 million, hemoglobin 9.9 Gm. per hundred cubic centimeters) occurred simultaneously with those for leukocytes and platelets. Recovery from anemia paralleled that for the other formed blood elements and was hastened by blood transfusions.

An instance of complete failure of halogenated alkyl amine therapy to influence the course of a radiation refractory and terminal case of lymphosarcoma is illustrated in the following brief case report:

CASE 3.—E. W., a woman aged 42, a housewife, was first seen in September 1943, when she complained of severe pruritus, substernal pain, cough and dyspnea. Study disclosed a rapidly growing mediastinal lymphosarcoma, verified pathologically by biopsy (cervical node). Radiation therapy gave temporary relief but finally failed to retard the growth of the mediastinal mass. Observations on final hospital admission in February 1944 included fever, generalized severe pruritus, cough, dyspnea, bilateral pleural effusion, cervical nodes and the intrathoracic mass. The blood picture was not remarkable. Five doses of methyl-*bis*(β-chloroethyl)amine hydrochloride were given (0.1 mg. per kilogram of body weight per dose, every other day). There was no objective or subjective improvement; the ingravescent course progressed, and death occurred five weeks after the start of nitrogen mustard therapy. Postmortem examination verified the diagnosis of lymphosarcoma, which was found to involve the lungs, pleura, pericardium, myocardium, diaphragm and ribs.

Chronic Leukemias.—Twelve patients with chronic leukemia have been treated with nitrogen mustards, 10 with methyl-*bis*(β-chloroethyl)amine hydrochloride and 2 with *tris*(β-chloroethyl)amine hydrochloride. Seven cases were of the chronic myelocytic type, and 4 of chronic lymphocytic leukemia. In 6 terminal or nearly terminal cases the treatment was of no appreciable value. In 6 other patients, however, the results of treatment with the β-chloroethylamines were comparable with those obtained with radiation therapy. In addition, even when concomitant clinical and symptomatic benefits did not occur, nitrogen mustard often caused a reduction in the leukocyte count, a more normal differential formula, improvement in the appearance of the bone marrow and more persistence in the effect of blood transfusion. In 1 patient with chronic lymphocytic leukemia the signs and symptoms of hypermetabolism were considerably relieved. Further experience is needed to determine the status of these agents in chronic leukemias.

The following case abstract serves to illustrate the beneficial effect of nitrogen mustard therapy on a patient with chronic myelocytic leukemia:

CASE 4.—B. C., a white man aged 52 with typical chronic myelocytic leukemia of four years' duration, had received radiation therapy at approximately yearly intervals from 1941 to 1944 inclusive, with remission of symptoms following each course of therapy. In May 1945 fatigability had returned, the leukocyte count was 293,000 and the red cell count was 3.11 million per cubic millimeter. The spleen extended 3 cm. below the umbilicus and the liver 5 cm. below the costal margin. Five doses of methyl-*bis*(β-chloroethyl)amine hydrochloride (0.1 mg. per kilogram per dose) were given over a two week period, and two blood transfusions of 500 cc. each were administered during this same period. Six weeks later the patient had no anemia (hematocrit 50) and the leukocyte count was 25,800 per cubic millimeter. The spleen and liver had decreased appreciably in size. The patient had gained 10 pounds (4.5 Kg.) in weight and was able to do light work. Eight weeks later (four months after the start of therapy) the patient was still feeling well, was doing regular work and maintaining the gain in weight but because of a slight anemia (hematocrit 40) and a leukocyte count of 50,400 per cubic millimeter he was hospitalized and given four more doses of the drug. Following this second course of therapy he felt well, the hematocrit again rose and the leukocyte count decreased to 11,300. Two months later he was found to be slightly anemic (hematocrit 37) and the leukocyte count had risen to 103,000. Three more injections of drug were given and again an increased hematocrit and decreased leukocyte count were obtained. At the present time, nine months after the first course of therapy, the patient is in a state of fairly complete remission, both hematologically and clinically.

Subacute and Acute Leukemias.—Seven patients with acute or subacute leukemia were treated with nitrogen mustards, 5 with *tris*(β-chloroethyl)amine hydrochloride and 2 with methyl-*bis*(β-chloroethyl)amine hydrochloride. Four cases were myeloblastic in type and 3 were lymphoblastic. The clinical results in most of the cases were not particularly encouraging, but in 3 partial clinical and hematologic remissions were obtained. In 1 patient with subacute lymphoblastic leukemia a brief but definite clinical remission with a decrease in the total leukocyte count and in the size of the spleen occurred, but the ultimate fatal outcome

Fig. 2 (case 2).—Eight days later and two days after the last dose. Complete disappearance of tumor masses in axillas, neck, jaw and thorax, with decided improvement in the patient's condition.

was only briefly postponed. The decrease in thrombocytes caused by halogenated alkyl amines was a complicating factor in the use of this agent in several patients with platelet values which were already quite low. Improvement in the white blood cell count, differential formula or bone marrow picture was not always paralleled by clinical or subjective gain. Indeed, in at least 2 patients there is the possibility that β-chloroethylamine therapy may have accelerated the fatal termination.

The brief case report which follows illustrates the failure of nitrogen mustard therapy in a patient with subacute myeloblastic leukemia:

CASE 5.—S. C., a woman aged 66, a housewife, was hospitalized in October 1943 in the terminal phase of subacute myeloblastic leukemia. Symptoms had existed for five months; they were becoming progressively worse and included fatigue, dyspnea, anorexia and dizziness. Examination revealed moderate fever and tachycardia, pallor, cutaneous purpura and ecchymoses. The spleen and liver were not palpable, and there was no lymphadenopathy. Examination of the blood revealed moderately severe anemia (hematocrit 21) with 68,000 leuko-

cytes (89 per cent myeloblasts) and 50,000 platelets per cubic millimeter. Study of the bone marrow revealed almost a "pure culture" of primitive cells (many of them peroxidase positive) and numerous other cells of the granular series.

After several blood transfusions, *tris*(β-chloroethyl)amine hydrochloride 0.1 mg. per kilogram of body weight was given every other day for three doses intravenously by the direct syringe method. Severe nausea, vomiting and weakness resulted. There occurred a rapid fall in the total leukocyte count over a period of one week (to 600 cells per cubic millimeter) with an absolute and relative reduction in primitive cells. But the complete disappearance of platelets and rapid progression of the anemia were concomitant (but not necessarily causally related) features. As the granulocytes and platelets returned during the second week after therapy, more differentiation into myelocytes and metamyelocytes was observed. Although there was a specific effect on proliferating primitive cells, this was short lived and not associated with objective or subjective clinical improvement. The condition of the blood soon deteriorated, cerebral hemorrhage occurred one month after completion of nitrogen mustard therapy, and the patient died shortly thereafter.

Postmortem examination revealed hyperplasia of the bone marrow, diffuse hyperplasia of the lymph nodes of the abdomen and pelvis, multiple punctate cutaneous, pleural and peritoneal hemorrhages and fresh intracranial hemorrhage. The bone marrow was entirely filled with a growth of undifferentiated cells suggesting atypical plasma cells. Similar cells were found in the lymph nodes, spleen, liver, kidney and skin.

Miscellaneous Neoplasms.—Eight miscellaneous diseases were treated with halogenated alkyl amines. No observable benefit resulted for 2 patients with melanosarcoma. However, in 1 patient in whom the tumor appeared as a diffuse infiltrating mass in the submaxillary region, chemotherapy with five consecutive daily doses of *tris*(β-chloroethyl)amine hydrochloride resulted in edema around the mass which delineated it from uninvolved tissue and permitted relatively simple enucleation at resection. A patient with a large retroperitoneal mass of unknown etiology failed to respond to treatment with nitrogen mustard. A second patient with an undiagnosed tumor (probably Hodgkin's disease) did not respond to therapy. A patient with reticuloendotheliosis received temporary relief from excruciating pain in the bone, and the leukemoid blood picture improved; but the ingravescent course and the ultimately fatal outcome were not altered. An elderly woman with pleural metastases from a mammary carcinoma which had been resected two years previously required less frequent thoracenteses after chemotherapy with four consecutive daily doses of *tris*(β-chloroethyl)amine hydrochloride, but the causal relationship could not be established with certainty. The clinical course of a patient with carcinoma of the cervix and mediastinal metastases was unaltered by treatment with nitrogen mustard. An elderly woman with giant follicular lymphoma exhibited a moderate reduction in the size of the lymph nodes and spleen after six consecutive daily doses of methyl-*bis*(β-chloroethyl)amine hydrochloride but experienced no corresponding clinical benefit and died three weeks later.

The results of the limited experience here described with neoplasms other than lymphomas and leukemias suggest that the halogenated alkyl amines employed are fairly specific in their tissue affinities, a tentative conclusion supported by animal studies employing experimental virus tumors in fowl,[6] testicular interstitial cell carcinoma in mice, and mammary carcinoma in mice.[3]

6. Duran-Reynals, F.; Goodman, L. S., and Gilman, A., 1942. Unpublished observations.[3]

TOXICITY

Immediate Local and Early Systemic Effects.—Local extravasation during the injection of solutions of the β-chloroethylamine hydrochlorides resulted immediately in pain and subsequently in tender indurated swellings which resolved slowly. Thrombophlebitis of the injected veins was observed in a number of cases but was probably less prone to occur with methyl-*bis*(β-chloroethyl)amine hydrochloride than with *tris*(β-chloroethyl)amine hydrochloride. The incidence of thrombophlebitis as well as of pain during administration was decreased by injecting the nitrogen mustard solutions into the lumen of the rubber tubing while an intravenous infusion was flowing rather than into the vein by the direct syringe technic.

Nausea and vomiting were commonly observed after nitrogen mustard therapy, occurring within one to three hours after the injection and subsiding within a few hours. Nausea and vomiting were more apt to follow the first one or two injections in a course. Anorexia was infrequent and transient. Diarrhea was not observed in the patients of this series. Preliminary sedation with a barbiturate and the withholding of food (usually an overnight fast) prior to treatment tended to decrease untoward gastrointestinal symptoms. Febrile response to the therapy was not observed, but 1 patient had a chill shortly after treatment.

Late Systemic Effects.—The toxic effects of the halogenated alkyl amines on the blood and blood-forming organs have been carefully investigated in a variety of laboratory animals and in man. As numerous reports [1] are available in this field, it is necessary here only to summarize briefly what may occur during the therapeutic administration of these agents to man. The toxic effects of the β-chloroethylamine hydrochlorides on the hemopoietic tissues are in some respects merely extensions of the therapeutic effects. Although the chemicals seem to have a selective action on primitive cells and abnormal hemopoiesis, in sufficiently large doses the compounds affect all elements of the bone marrow, producing a decided leukopenia and thrombocytopenia and a moderate normochromic anemia. The objective in treatment against lymphomas and leukemia is to keep the dosage within the relatively narrow range of safety, so that maximal salutary clinical results can be obtained with a minimal untoward effect on the formed elements of the blood. The dosage schedules employed were specifically designed to accomplish this end. Nevertheless the leukotoxic action was usually evident. Lymphopenia and neutropenia of moderate degree occurred in most patients within the first week or two after a course of therapy, the lymphopenia sometimes appearing first. Mild reduction in the volume of packed erythrocytes was also observed in a number of patients and reached its peak in about three weeks; but frequently a preexisting anemia improved as a result of the beneficial effect of the nitrogen mustards, for example on myelophthisic anemia.

Detailed and repeated laboratory tests (urine, renal function, liver function, blood chemistry and others) failed to indicate any abnormal or untoward responses to the β-chloroethylamines in the doses employed, other than those previously enumerated.

In the 2 patients who were the first ever treated with *tris*(β-chloroethyl)amine hydrochloride, before optimal dosages could be determined for man, toxic hemopoietic effects were observed in the following sequence: the

complete disappearance of circulating lymphocytes, definite leukopenia and granulocytopenia (without mucosal lesions or other signs or symptoms of agranulocytosis except fever), thrombocytopenia of severe grade with purpura, and moderate anemia. Repeated blood transfusions were necessary, and the return of blood values to pretreatment levels required several weeks.

CLINICAL STATUS OF THE NITROGEN MUSTARDS

The halogenated alkyl amines would appear to be able to produce the same qualitative clinical results in Hodgkin's disease, lymphosarcoma and leukemia as does radiation therapy. In general these chemicals have the same "total" effect on lymphoid cells and those of the bone marrow and on the hyperplasia of the reticulum cells in Hodgkin's disease as does radiation therapy. Whether they have any imperative advantages over the best possible type of radiation therapy remains to be determined. It is fairly certain that the β-chloroethylamines are capable of producing salutary effects and even therapeutic remissions in patients who have become resistant to roentgen irradiation. However, the term "resistant to roentgen irradiation" is variously employed by radiologists, and it was not always ascertainable in the cases herein reported whether the term was truly applicable in the sense that the tumor cells would no longer respond to properly applied radiation.

In 4 patients there was evidence that sensitivity of the tumor tissue to radiation therapy returned after a course of nitrogen mustard therapy. This is not too unexpected, as new generations of tumor cells are involved. In 1 patient who was unresponsive either to radiation or to nitrogen mustard therapy a favorable response was obtained when the two agents were used simultaneously.

Whether the β-chloroethylamines can or should either replace or supplement radiation therapy in any or all categories of cases in which they have been found effective cannot be stated at this time, particularly because the majority of the 67 patients concerned in the report were in the terminal stages of their disease. Nor can it yet be stated whether halogenated alkyl amine treatment may be expected to yield remissions as complete or as lasting as does radiation therapy. The question as to whether the chemicals should be used as agents of choice in "fresh" (i. e. previously untreated) cases also remains unsettled, but there is sufficient evidence to warrant investigation of this problem. Obviously there is as yet no adequate backlog of clinical experience with the nitrogen mustards, such as exists for radiation therapy, to serve as a basis for judging their value in comparison with other therapeutic measures.

As a rule, local and immediate systemic reactions would appear to be less severe after chemotherapy with the β-chloroethylamines than after irradiation, and dermatitis due to the latter is avoided. Certainly therapy should prove to be less expensive, particularly in cases in which ambulatory treatment schedules would be feasible. No costly equipment is required. It must be emphasized, however, that the margin of safety in the use of the nitrogen mustards is quite narrow. The maximal tolerated dose (that which does not cause harmful hemopoietic effects) is usually not much larger than the optimal therapeutic dose. Considerable care must therefore be exercised in the matter of dosage, and repeated examination of the blood is mandatory in all cases as a guide to subsequent therapy.

The answers to numerous other questions which occur to investigator and reader alike cannot even be approximated at present. For example, optimal dosage schedules remain to be determined both for initial therapy and for prophylactic treatment during remissions. Various combinations and schedules of two or more agents (radiation, halogenated alkyl amines, radioactive phosphorus, arsenicals and the like) may prove superior to any one agent alone. The indications and contraindications for the use of nitrogen mustards cannot be stated definitively. Although immediate but transitory side effects may be more prominent with *tris*(β-chloroethyl)amine than with methyl-*bis*(β-chloroethyl)amine, further comparison of the clinical efficacy of these two agents is not as yet possible. Numerous congeners of the two halogenated alkyl amines employed in this study are known, and a number of them are available. It is possible that certain of these congeners may be more selective and potent in action and less toxic than the β-chloroethylamines employed up to the present. Certainly the subject is deserving of investigation.

Encouraging clinical results, sometimes dramatic, have been obtained particularly in Hodgkin's disease and lymphosarcoma and occasionally in chronic leukemia. It is not understood why some patients respond and others do not. Varied results have been seen in acute and subacute leukemia. Giant follicular lymphoma (1 case) did not respond to therapy nor did a small group of miscellaneous disorders including melanosarcoma and reticuloendotheliosis. Like roentgen irradiation, the β-chloroethylamines do not constitute a cure but only offer symptomatic palliative therapy. In our opinion the use of these agents would seem to represent a definite but limited advance in the management of lymphomas and leukemias, though perhaps the clinical implications are less impressive than the heuristic.

COMMENT

This brief preliminary communication presents the clinical results obtained for 67 patients treated with the nitrogen mustards (halogenated alkyl amine hydrochlorides) for Hodgkin's disease, lymphosarcoma, leukemia and certain related and miscellaneous diseases. Complete reports including pathologic observations and detailed hematologic data will be submitted later.

Salutary results have been obtained particularly in Hodgkin's disease, lymphosarcoma and chronic leukemia. Indeed, in the first two disorders dramatic improvement has been observed. However, some patients fail to benefit from β-chloroethylamine therapy, and the cause of this failure is not known. Varied responses have been observed in acute and subacute leukemias. Diseases other than those of the blood-forming organs would not seem at present to constitute indications for the use of the nitrogen mustards.

In an impressive proportion of terminal and so-called radiation resistant cases, especially of Hodgkin's disease and lymphosarcoma, the β-chloroethylamines have produced clinical remissions lasting from weeks to months. There is evidence to suggest that responsiveness to radiation therapy may occasionally be restored after a course of nitrogen mustard therapy.

The margin of safety in the use of these chemicals is narrow, necessitating the exercise of considerable caution. The blood picture must be carefully followed at frequent intervals as a guide to subsequent dosage.

Immediate local or systemic side effects (pain on injection, thrombophlebitis of injected veins, nausea and vomiting, malaise, anorexia and headache) are relatively inconsequential and can sometimes be avoided or mitigated by careful technic. More serious late toxic effects are concerned with the blood-forming organs (leukopenia, granulocytopenia, thrombocytopenia, anemia) and can be largely avoided by adherence to safe dosage schedules.

Optimal dosage schedules—as well as possible combinations of this treatment with radiation or other agents—for initial, continuation or interim prophylactic therapy remain to be determined. It is not known whether the β-chloroethylamines used in this study represent the best compounds of their chemical group.

Although indications and contraindications for the use of the nitrogen mustards remain to be established definitively, it is felt that these agents are deserving of further clinical trial in Hodgkin's disease, lymphosarcoma and leukemia. Like radiation, they do not cure.

Chemicals discovered to be therapeutically active in neoplastic disease deserve close study by clinicians, experimental pathologists, enzymologists and others interested in cancer and in cellular biology. From this point of view the heuristic aspects of the actions of the β-choloroethylamines here reported may eventually prove of greater importance than the clinical results obtained to date.

RECURRENT HIATUS HERNIA

N. C. GILBERT, M.D.
FREDERICK L. DEY, M.D.
and
JOSEPH E. RALL, M.D.
Chicago

It is a frequent observation that symptoms and the roentgenologic findings of hiatus esophageal hernia appear and disappear over varying periods of time and in response to certain conditions. Several years ago von Bergmann [1] wrote of "free hiatus hernia," and Hurst [2] of "recurrent hiatus hernia," but neither attracted the attention which their communications warranted. As Levy [3] stated, "We have observed, not infrequently, the presence of a hernia fluoroscopically and also demonstrated it upon a film, only to find it impossible to locate any hernia at another examination." Any program for the management of this condition demands some consideration of why such a herniation should occur and under what conditions it should appear and disappear.

OBSERVATIONS FROM THE LITERATURE

It would seem improbable that any congenital shortening of the esophagus could play a large part in the production of a condition which is infrequent before the age of 40, and in which the average age of onset is 55. Akerlund's [4] original article figures several patients with a redundant esophagus. This is a frequent observation in the obese, or when the hernia is consequent on other sources of increased intra-abdominal pressure. Cases in which there is a congenitally short esophagus and cases of thoracic stomach certainly occur, but they are not relatively frequent. Cases due to a shortening of the esophagus as a result of inflammatory changes are infrequent.

It is probable that most cases of hiatus hernia of the stomach begin as the free or recurrent variety. They may continue to be recurrent, or they may become fixed because of inflammatory changes or other secondary anatomic conditions or because of a continuation of the factors which originally caused their appearance.

Hiatus hernia is not at all an infrequent condition. Just how frequent it is, we do not know. Root and Pritchett [5] found hiatus hernia in 1.3 per cent of all patients examined. Weintraub and Tuggle [6] quoted Rude as observing an incidence of 2.4 per cent in an unselected series of patients. Knothe,[7] quoted by Hurst,[2] found an incidence of 4.5 per cent in symptomless controls. Schatzke, also quoted by Hurst,[2] demonstrated such hernias in 70 per cent of patients over 60 years of age. As Hurst commented, however, this high frequency was probably due in large part to his technic, which greatly increased the intra-abdominal pressure. Many patients may not have had such a hernia either before or since.

Even though the tissues at the hiatal orifice are normally lax and permit a certain amount of play of the esophagus, it appears certain that some extensive deviation from normal must precede the occurrence of a hiatus hernia. It may be that in some patients there is a congenital deficiency of the tissue at the hiatal orifice which may predispose to a herniation. Hurst [2] and others have suggested that, because of the age of incidence, there may be senile changes in the tissues which result in relaxation. The large incidence in hiatus hernia in patients past the age of 60, as shown by Schatzke, would support this belief. Frequent episodes of increased intra-abdominal pressure due to coughing or retching, or emesis, could possibly tear and stretch the tissues, as would the constant effect of increased intra-abdominal pressure due to obesity or pregnancy, to abdominal tumor or to ascites. An increase in intra-abdominal pressure caused by trauma might also initiate a hernia.

Granted some relaxation of the tissue about the hiatal orifice, it is easy to see why an esophageal hiatus hernia could occur in cases of increased intra-abdominal pressure due to obesity or other causes, especially in patients with a firm and muscular abdominal wall. Rigler and Eneboe [8] found that 18 per cent of 195 pregnant women showed a hiatus hernia on roentgenologic examination. In 3 of 10 of these women who were examined again post partum a hernia was still present.

Decreased intrathoracic pressure may be a causative factor, as is shown when the hernia is demonstrated fluoroscopically with a deep inspiration. In the experimental animal we found it difficult to produce a hernia with the chest closed and the abdomen open. Just how important intrathoracic pressure is clinically is doubtful. The deep inspiration in constant coughing might be a factor, as well as the increased intra-abdominal

From Northwestern University Medical School and St. Luke's Hospital.

1. von Bergmann, G., and Goldner, M.: Funktionelle Pathologie, eine klinische Sammlung von Ergebnissen und Anschauungen einer Arbeitsrichtung, Berlin, Julius Springer, 1932, p. 70.
2. Hurst, A. F.: Recurrent Hernia of the Stomach Through the Hiatus Oesophageus of the Diaphragm, Guy's Hosp. Rep. **84**: 43, 1934.
3. Levy, M. D., and Duggan, L. B.: Hiatus Hernia of the Stomach, South. M. J. **34**: 351, 1941.
4. Akerlund, A.; Ohnell, H., and Key, E.: Hernia Diaphragmatica Hiatus Oesophagei, Acta radiol. **6**: 3, 1926.
5. Root, J. C., and Pritchett, C. K.: Diaphragmatic Hernia, Cleveland Clin. Quart. **5**: 203, 1939.
6. Weintraub, S., and Tuggle, A.: Duodenal Diverticula, Radiology **36**: 297, 1941.
7. Knothe, W.: Die Hiatushernien vom Standpunkt des Röentgenologen, Deutsche med. Wchnschr. **58**: 609, 1932.
8. Rigler, L. G., and Eneboe, J. B.: The Incidence of Hiatus Hernia in Pregnant Women and Its Significance, J. Thoracic Surg. **4**: 262, 1935.

pressure. It could readily be assumed that the differential pressure between the abdominal cavity and the thoracic cavity could be a factor.

There remain, however, a large number of cases in which an increase in intra-abdominal pressure is not present, and in which the observations and symptoms of hiatus hernia appear and disappear, or may become permanent. Several years ago von Bergmann [1] suggested that many of these hernias might be due not to pulsion from below but to traction from above by an esophagus shortened in response to a vagovagal reflex initiated by some stimulus originating in the upper abdominal viscera. The longitudinal fibers of the lower portion of the esophagus are continuous with the longitudinal fibers of the stomach and are motivated by the vagus nerve. Any shortening of the fibers would tend to pull the stomach up to the diaphragm and through a relaxed hiatal orifice. Kuckuck, quoted by von Bergmann,[1] stimulated the vagal trunk in the neck of the rabbit and was able to demonstrate a shortening of the esophagus which in some cases resulted in the traction of the cardiac end of the stomach above the diaphragm.

This conception offers a reasonable hypothesis to account for many of the hiatus hernias observed clinically in which the symptoms come and go in a pattern similar to that observed in duodenal ulcer. The esophagus is notoriously amenable to nervous stimuli; as witness, globus hystericus, many cases of cardiospasm and the esophageal symptoms appearing reflexly in early stages of carcinoma of the stomach.

A great many authors have indicated the frequent association of other visceral lesions with hiatus hernia but have not directly associated them, as far as we know. Weintraub and Tuggle,[6] however, in a study of 310 cases of duodenal diverticula, found hiatus hernia to be present in 9 per cent as against a normal incidence of 2.4 per cent in the same hospital.

OBSERVATIONS BY THE AUTHORS

We wish to report on a small series of cases of hiatus hernia in each of which a complete roentgenologic examination was made as well as on some experimental work showing the occurrence of hiatus hernia in the dog during electric stimulation of the vagus and, reflexly, by stimuli arising in the upper part of the abdomen. It was a consideration of these clinical cases, and especially of 1 case in which the symptoms and observations were obviously of nervous origin, that led us to repeat the experimental work of Kuckuck and to carry it further.

The work of Kuckuck was repeated on the dog and in one instance on the rabbit by Rall, Gilbert and Trump.[9] Michel clamps were fastened to the lower end of the esophagus and to positions on the stomach wall. After control roentgenograms were made with the subject at rest, the vagal trunk in the neck was stimulated electrically. The esophagus was seen to be shortened and the stomach to be pulled up to, but not through, the hiatal opening. In these experiments the chest was closed. Later, in some further work, when the chest was open the stomach was seen to be pulled up through the hiatal orifice when the tissues of the hiatal orifice were not reinforced by the tamponade of the inflated lung.

In order to determine whether the same result could be elicited reflexly, Dey, Gilbert and Trump [10] performed another series of experiments on dogs in which lengthening and shortening of the esophagus was recorded on a revolving drum by a lever fastened to the esophagus. Irritation of the peritoneum by scratching with a sharp, pointed instrument, manipulation of the leaves of the liver, distention of the gallbladder by isotonic solution of sodium chloride, distention of the cystic duct or manual stretching of the stomach wall, all caused a shortening of the esophagus and a pulling up of the stomach to and in some cases through the hiatal orifice. The reflex was abolished by vagal section or by the administration of atropine.

The cases of recurrent hiatus hernia which gave the original impetus to the work eventually reached 48 by the time the experimental work was finished. All the patients had complete roentgenologic examination of the gastrointestinal tract and gallbladder, and all were personally observed and followed.

There were 23 women and 25 men. This ratio would vary with the type of practice from which the patients were selected. Our experience was predominantly with male patients and was a small series. It could be assumed that, in general, parous women would be more prone to have such herniation develop, according to the experience of Rigler and Eneboe.[8] The average age of our patients was 56⅔ years.

Distribution of Cases of Recurrent Hiatus Hernia by Etiologic Factors

No apparent etiologic factor	7
Obesity alone	9
Cholelithiasis	10
Cholelithiasis and obesity	3
Cholelithiasis, duodenal ulcer and obesity	1
Duodenal ulcer	5
Esophageal diverticula	4
Esophageal diverticula and obesity	1
Duodenal diverticula	1
Carcinoma of stomach	1
Tumor involving diaphragm	1
Severe and prolonged coughing	2
Nervous influences predominantly	3

The distribution of the cases according to possible etiologic factors is shown in the accompanying table. It is evident that some latitude must be allowed for in this classification. The cases classified under obesity we can feel confident about, as the patients improved on a reduction diet. But in the group including those patients in whom no etiologic factor was apparent, part of them could have been considered as possibly having some increased intra-abdominal pressure due to obesity. Many could also be classified as having a large nervous element. Without some form of measurement increased abdominal pressure is hard to evaluate.

Diverticula of the colon were not considered as a source of reflex stimulation. They are a commonplace occurrence in all groups of patients and are not provocative of symptoms unless diverticulitis occurs. In the experimental work, stimulation of the colon or rectum did not evoke a reflex.

There were 3 patients in whom nervous influences, such as fatigue consequent on overwork, strain, tension

9. Rall, J. E.; Gilbert, N. C., and Trump, R. C.: Effect of Vagus Stimulation on the Long Fibres of the Stomach and Esophagus, Quart. Bull. Northwestern Univ. M. School **19**: 194, 1945.

10. Dey, F. L.; Gilbert, N. C.; Trump, R. C., and Roskelley, R. C.: Reflex Shortening of the Esophagus in the Experimental Animal with the Production of Esophageal Hiatus Hernia, J. Lab. & Clin. Med. **31**: 499, 1946.

or emotion, were prominent and in whom no source of reflex stimulation was found. However, in some of those patients with possible sources of a vagovagal reflex, factors of nervous origin were evident, especially in those with duodenal ulcer.

Hurst [2] commented on the effect of fatigue and of nervous factors. The effect of nervous influences was in some instances pronounced, and in more cases than the 3 so designated the patients could easily have been classed with what Huston calls the "spasmogenic aptitude," or what Eppinger and Hess refer to as the "vagotonic type." One of our patients was a temperamental musician whose disease is classified here as duodenal ulcer. Even during times when the ulcer was quiescent, he would develop severe symptoms of hiatus hernia through worry or emotional excitement. His symptoms were relieved by atropine. Another patient, a physician, was unable to sleep unless in a semireclining position when the hernia was present but would be perfectly free from symptoms with adequate rest and relief from so-called nervous strain.

It will be seen from the table that among 48 cases there were 27 in which there was some possible source of vagovagal reflex. In 5 patients such a source was associated with obesity. This is unquestionably a larger proportion of reflex stimulation than would be found in 48 patients of similar age sampled at random.

There were only 3 patients with significant secondary anemias, and in 2 of these the hernia was incarcerated. In all 3 there was evidence of blood in the stools.

Thirty of the patients came under observation because of gastrointestinal symptoms. Sixteen came under observation because of symptoms of angina pectoris, and 2 because of paroxysmal auricular fibrillation which came on when the hernia occurred. In 1 of the latter stooping over was a factor, and in the other, emotional strain and fatigue. Four of those with anginal symptoms died suddenly of what was diagnosed as coronary occlusion. In only 1 of these cases was the patient seen at the time of death and the diagnosis confirmed at autopsy.

Three patients were operated on for cholelithiasis and obtained relief. In the cases in which obesity was a determining factor in the occurrence of the hernia, the patient invariably experienced relief on following a diet and obtaining a reduction of weight.

The result of treatment is difficult to evaluate without a separate analysis of each case, which is not within the scope of this paper. All patients were treated medicinally and placed on liberal ulcer management, with phenobarbital and atropine or belladonna, or some drug with an atropine-like action. All experienced some degree of relief, from very little to complete, depending on the underlying factor which determined the herniation.

Difference of Practice Among Scientific Men.—There is a difference of practice among scientific men with regard to publishing speculations suggested by their results. Nothing is easier than to let one's imagination spin fancies on the basis of slight evidence. Fancies may or may not later prove true. As a rule it has seemed to me wiser to advise beginners to confine their report to the facts which have been obtained in the course of investigation and to withhold intimated possibilities derived from these facts until there has been further study.—Cannon, Walter B.: The Way of an Investigator, New York, W. W. Norton & Co., Inc., 1945.

TREATMENT OF TYPHOID FEVER WITH TYPE SPECIFIC BACTERIOPHAGE

Preliminary Report

EVELYNNE G. KNOUF, M.D., South Pasadena, Calif.
WALTER E. WARD, M.D., Ph.D., Los Angeles
PAUL A. REICHLE, M.D., Los Angeles
A. G. BOWER, M.D., Pasadena, Calif.
and
PAUL M. HAMILTON, M.D., San Marino, Calif.

Bacteriophage has been used for the past ten years in the treatment of patients with typhoid fever in the Communicable Disease Unit of the Los Angeles County General Hospital.[1] During the first four years of this period unselected stock bacteriophage was utilized for therapy. All the patients so treated reacted with a chill and fever, to be described in more detail later. Therapeutically, some seemed to derive no benefit whatever, while others proceeded with an obviously or at least an apparently modified course, and some achieved truly startling bacteriologic and clinical recovery. Results in these latter patients were so spectacular that they caused us to continue the study despite the discouragement of many failures and indifferent successes, for they seemed to indicate an unknown factor which might, when discovered, lead to more uniformly good results. Bower [2] published a preliminary report of the problem at this stage.

The search for this unknown factor led to a consideration of the bacteriophage itself. The present concept of the nature of these virus-like agents is that the bacteriophages are parasites of bacteria. The host-parasite relationship in this case may or may not result in lysis of the bacteria involved. The number of bacteriophages is legion, and there are detectable differences in their ability to attack certain genera and species of bacteria. As the spectrum of attack becomes convergent the bacteriophage in question is frequently spoken of as being specific. As a result of the work of Craigie and Yen [3] it is now known that a given immunologic type of bacteriophage active on Vi antigen containing Eberthella typhosa organisms can be adapted to differentiate types of this organism. Such an adapted phage not only is highly specific, but it also shows or exhibits the ability of lysing the corresponding type of bacterium when the bacteriophage is present in extremely high dilutions. Several workers have demonstrated that experimentally induced typhoid infection in mice is capable of resolution by the parenteral use of typhoid bacteriophage (Fisk [4] and Ward [5]). During recent years it has been shown that the treatment of experimental typhoid infections in mice with type specific bacteriophage results in apparent multiplication of phage in vivo.[5] A similar state has been shown to exist in other instances.

From the Department of Communicable Diseases, Los Angeles County General Hospital.

Read before the Section on Pediatrics at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946.

1. Dr. Thomas McCleave of Berkeley, Calif., brought his early work to our attention. This served as an initial stimulus for our work.

2. Bower, A. G.: Modern Treatment of Typhoid Fever, Mil. Surgeon **3**: 70-75, 1938.

3. Craigie, J., and Yen, C. H.: The Demonstration of Types of B. Typhosus by Means of Preparations of Type II Vi Phage, Canad. Pub. Health J. **29**: 448-463 and 464-496, 1938.

4. Fisk, R. T.: Protective Action of Typhoid Phage on Experimental Typhoid Infection in Mice, Proc. Soc. Exper. Biol. & Med. **38**: 659-660, 1938.

5. Ward, W. E.: Protective Action of Vi Bacteriophage in E. Typhi Infections in Mice, J. Infect. Dis. **72**: 172-176, 1943.

These considerations led to the second phase of our study, during which patients were treated only with type specific bacteriophage proved to be especially potent in lysing their own organisms. This change we feel has been responsible for an improvement in the results of treatment. In the course of this regimen each patient's organisms were obtained from a culture of his own blood, and high potency bacteriophage specific for his type of E. typhosa organisms was prepared. This, incidentally, is not invariably possible, because some strains of the organism do not type. Early in the study 1 cc. of the bacteriophage material was injected directly into the vein; later it was found the reaction could be reduced and in some measure controlled by the dilution of this 1 cc. in a 5 per cent dextrose solution.

The patients in this report received their type specific bacteriophage material in 500 cc. of a dextrose solution administered by the intravenous drip method over a period of four to seven hours. The first clinical observation after treatment was started was a moderate chill which lasted approximately thirty minutes. After the chill the temperature began to mount and reached a peak of 105 to 107 F. within three to six hours after treatment began. The temperature returned to normal

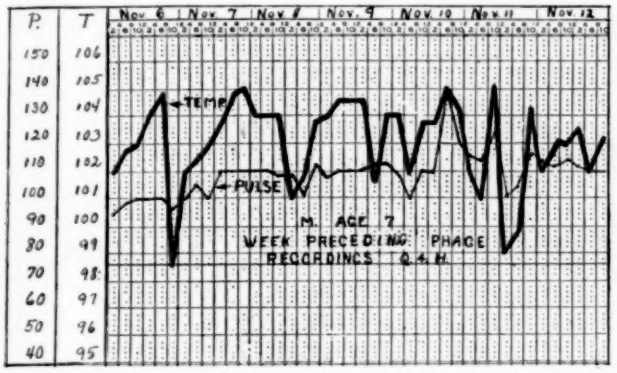


Chart 1 (case 1).—Temperature and pulse graph for the week preceding bacteriophage therapy; recordings every four hours.

within nine and one-half to twenty-four hours after the commencement of treatment and in most instances remained normal thereafter. In none of the cases here reported did clinical shock occur during the rapid rise and fall of temperature, although we did see this syndrome frequently with the earlier method of administration. All patients had been properly prepared before treatment and were watched closely during it. Transfusions, parenteral fluids and the like were given as needed.

We have now treated 56 patients with type specific bacteriophage. Of this group, 3, or a little more than 5 per cent, died. The survivors without exception showed a profound change in the course of their infections, regardless of the stage of the disease in which they were treated. About 10 per cent had a clinical and bacteriologic relapse; these patients were amenable to repeated treatment. Cultures of blood from all the others became immediately and permanently negative. Thus, the majority of these patients may be said to have achieved a cure by crisis according to the criteria: (1) blood cultures negative twenty-four hours after treatment and continuously negative thereafter; (2) absence of fever after treatment, and (3) immediate clinical improvement.

One of the most spectacular objective accomplishments of this form of treatment was the rapidity with which the patient returned to his normal mental outlook. Within twenty-four to forty-eight hours after bacteriophage therapy, the patient who had been comatose and in the "typhoid state" or who had demonstrated the characteristic whining, querulous, obstreperous manner amazed everyone by his cheerful, grateful, cooperative attitude. A state of euphoria existed. Also, patients whose anorexia before treatment was so great as to make forced feedings necessary, afterward usually asked for food, weakly at first and later, vociferously.

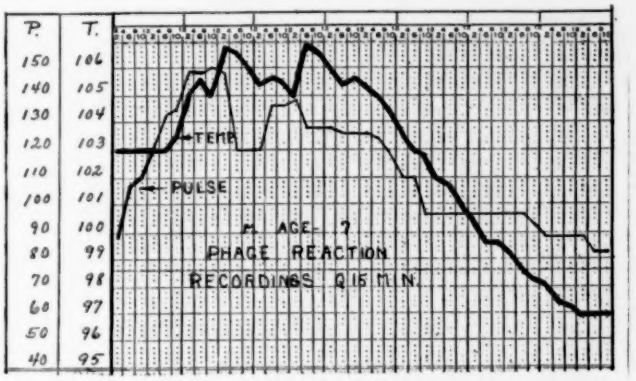


Chart 2 (case 1).—Reaction to bacteriophage therapy shown in graph of temperature and pulse recordings made every fifteen minutes.

The following cases of typhoid fever are here presented in brief. They represent a cross section of the patients treated with type specific bacteriophage. All temperatures recorded are rectal.

CASE 1.—C. E. B., a white boy aged 7, had typhoid fever due to type C organisms.

This child entered the hospital on Oct. 20, 1945 with the history of three weeks of abdominal soreness, general malaise and fever. His appetite had been poor; however, there had been no nausea, vomiting or diarrhea. There was a steady loss of weight and progressive weakness.

On examination one was impressed by the pallor and emaciation of the child. He would whimper and whine when he was touched or moved; otherwise he was quiet and appeared lethargic. The mouth was dry and dirty. The skin was hot and dry and presented roselike spots on the abdomen and lower part of the chest. The spots disappeared within a week. Cultures of material from the blood, stool, urine and rose spots remained negative day after day until Nov. 7, 1945 when E typhosa (type C) grew out in the culture of blood. Several blood transfusions were given.

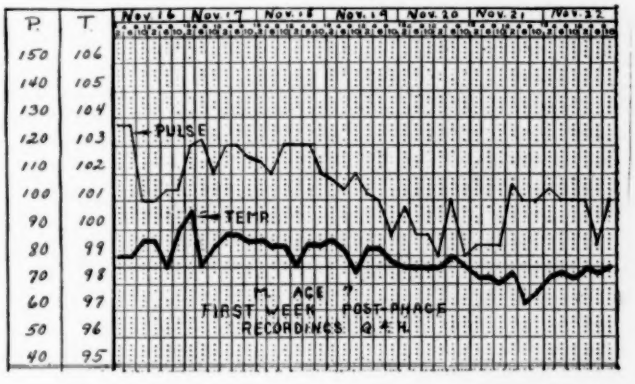


Chart 3 (case 1).—First week after the completion of treatment with type specific bacteriophage; temperature and pulse recordings every four hours.

On Nov. 15, 1945 a solution of 1 cc. of type C bacteriophage in 500 cc. of 5 per cent dextrose was given by the intravenous drip method. A mild chill lasting thirty-five minutes occurred

one and a half hours after phage was started. The bacteriophage took five and a quarter hours to run in. The temperature peak of 106.8 F. was reached in four and a quarter hours after therapy began. It reached normal in nine and a half hours and then fell to 96 F. where it remained for nine hours. At no time was the child in shock. Twenty-four hours after phage the most notable improvement, other than the normal

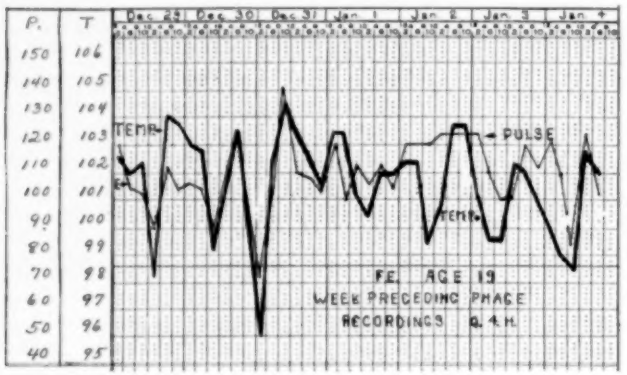


Chart 4 (case 2).—Temperature and pulse for the week preceding bacteriophage therapy shown in recordings made every four hours.

temperature, was the remarkable change in the disposition and attitude of the child. There was no more complaining. He was interested in his surroundings for the first time since entry. The temperature remained normal from this time forth; recovery was rapid. Cultures of blood, stool and urine remained negative. The patient was discharged as completely recovered on Dec. 10, 1945.

Case 2.—P. A., a Mexican woman aged 19, had typhoid fever due to type C organisms.

This patient entered the hospital on Dec. 27, 1945, having delivered on this date a viable eight month infant, with the diagnosis of typhoid fever established. She had contracted the disease in Mexico where, a month or so before, she had been caring for a grandmother who had the disease.

Examination revealed a thin, poorly developed woman whose temperature was 103 F., pulse rate 120 and blood pressure 102 systolic and 70 diastolic. The throat was injected; the spleen was not palpated; the uterus was firm and contracted; there were no rose spots. The Widal reaction test made on the patient's serum on Dec. 27, 1945 was positive in a dilution

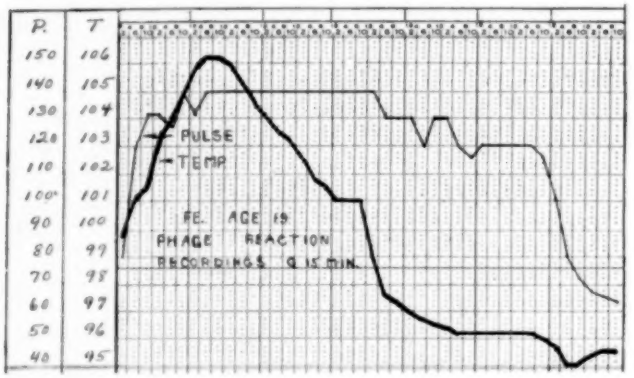


Chart 5 (case 2).—Reaction to bacteriophage therapy shown in graph of temperature and pulse recordings made every fifteen minutes.

of 1:320 and, on Jan. 6, 1946 in a dilution of 1:1280. The blood on culture was positive for E. typhosa.

On Jan. 6, 1946, 1 cc. of bacteriophage (type C) was given intravenously in 500 cc. of a 5 per cent dextrose solution which required four hours for administration. Within an hour and a half the patient began to chill; at the end of four hours the temperature was 105 F. At the end of eight hours the temperature was 95 F., where it remained for twelve hours. Thereafter it was normal until the discharge of the patient on Jan. 27, 1946. Blood, stool and urine yielded negative cultures after the completion of treatment.

Case 3.—E. C. L., a white man aged 39 had typhoid fever due to type F organisms.

This patient was sent to the Communicable Disease Unit from another hospital where two days previously he had had a cholecystectomy. The history revealed that for one month the patient had complained of malaise, listlessness and general debility. One week before entry to the other hospital there had been a slight sore throat and a mild, nonproductive nocturnal cough. During this period the patient became febrile, and his temperature ranged between 102 and 105 F. On Sept. 10, 1945 he had three chills. On September 11 nausea and vomiting developed, and the next day there was abdominal fulness and severe pain in the lower abdomen. On September 13 an exploratory laparotomy was performed. A normal appendix was found, but the gallbladder was moderately gangrenous. On incision of the mucosa of the gallbladder ulcers were found; examination of the terminal ileum revealed similar ulcerations. Cultures of bile produced typhoid organisms. Unpiped spring water at a trailer camp was the probable source of infection.

On entry here (Sept. 17, 1945) the patient was extremely toxic, moderately dehydrated and lethargic. The temperature was 100 F., the pulse rate was 84, and the respiratory rate was 20. The mouth and throat were dry; there were a few fine, moist rales over the base of the right lung; the abdomen

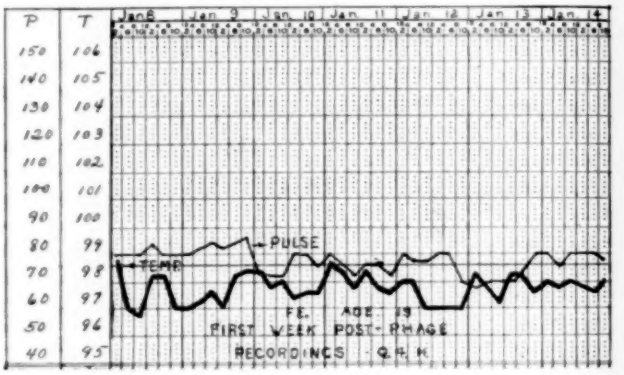


Chart 6 (case 2).—First week after the completion of treatment with type specific bacteriophage; temperature and pulse recordings every four hours.

was moderately distended and tender and had a linear incision in the right upper quadrant with a rubber drain protruding from its lower end. No rose spots were seen.

The patient became progressively worse; the temperature varied between 102 and 105 F. The abdominal wound became necrotic and separated so that omental tissue presented itself. Cultures of blood as well as those from the incisional drainage were positive for E. typhosa. The reaction of the patient's serum to the Widal test was positive in dilutions of 1:2560. Cultures of urine and stool were negative and remained so throughout the illness.

On Oct. 3, 1945, 1 cc. of type F phage was given in 500 cc. of a 5 per cent dextrose solution which took six and a half hours to administer. Within two hours a chill began which continued for thirty minutes. The temperature reached a peak of 106 F. in five hours and fell to normal in five more hours. From this time on the temperature remained normal. There was no evidence of shock; the blood pressure was maintained at 116 systolic and 80 diastolic. The subjective and objective clinical improvement apparent within forty-eight hours was spectacular. Cultures of blood as well as of incisional drainage became negative immediately. By October 15 the abdominal incision was healed. On October 25 the patient became ambulatory, and on Oct. 31, 1945 he was discharged.

Case 4.—C. C., a white man aged 31, had typhoid fever due to type F organisms.

He was admitted Sept. 19, 1945 with a history of fever, chills, general malaise, weakness, nausea which had persisted for two weeks and a nonproductive cough for the past two days.

On entry the patient had a temperature of 104 F., a pulse rate of 104 and a respiratory rate of 24. Rose spots were found on the chest; the throat was injected; the lungs were clear, and the spleen was not felt. Initial cultures of blood were positive for E. typhosa type F, and the reaction of the patient's serum to the Widal test was positive in a dilution of 1:320.

On Sept. 27, 1945, a solution of 1 cc. of type F phage in 500 cc. of 5 per cent dextrose was given intravenously over a period of four and a half hours. The temperature's peak of 106.4 F. was reached at this time, and the temperature turned to normal seventeen hours after the peak. Clinical improvement was immediate and gratifying. The disposition of the patient changed from a fault-finding nature to a cheerful, optimistic one. Cultures of blood remained negative. A culture of urine was positive for E. typhosa once (Oct. 13, 1945), and cultures from the stool were positive twice (October 10, 13) but were negative thereafter. The patient was discharged on Oct. 26, 1945.

CASE 5.—C. H., a Mexican man aged 25, had typhoid fever caused by type C organisms.

He was admitted to the hospital Aug. 30, 1945. His history disclosed that he had come from Mexico twenty-four days before and had had chills, fever, diarrhea and abdominal pain for at least eight days, together with pain in the left side of the chest and a slight cough for five days. He had had E. typhosa in a positive culture of his blood and a positive Widal reaction in a 1:1280 dilution of his serum before admission.

He was a poorly nourished, acutely ill, decidedly toxic man with dry skin, evidence of pneumonia in the upper lobe of the left lung and slight generalized abdominal tenderness. No rose spots were seen. From the time of entry the patient's life was despaired of because of repeated large hemorrhages from the bowel and nose. These occurred for the first time on Aug. 31, 1945 and daily thereafter until Sept. 12, 1945. For this reason, the patient received nothing by mouth but was given dextrose by the continuous drip method, repeated transfusions of blood and vitamin K.

On Sept. 8, 1945 type C phage was available, and 1 cc. was given in 500 cc. of a 5 per cent dextrose solution over a five and a half hour period. A chill occurred one hour after treatment was started and lasted thirty-five minutes. There was a steady rise of temperature from 102 to 107 F. in a three hour period. At the termination of phage administration the temperature was 105 F. where it remained for seven hours; a normal level was reached fifteen hours after treatment began. Blood pressure was maintained at about 78 systolic and 32 diastolic throughout. Within three hours after treatment began the patient lost approximately 300 cc. of blood by rectum. Replacement of the blood was made by transfusion. Cultures of blood remained negative for the typhoid bacillus. The temperature remained normal, and bleeding ceased on Sept. 12, 1945. Because cultures of urine were positive on three occasions, the patient remained in the hospital until Oct. 31, 1945. Prior to that date, however, all cultures had become negative.

CASE 6.—O. L. S., a Negro woman aged 29 had typhoid fever due to type A organisms.

She was admitted Oct. 9, 1945 from another service in the hospital with a report of a blood culture positive for E. typhosa. The patient had been febrile for one week; in addition there had been nausea, vomiting and diarrhea.

The patient was a thin, extremely dehydrated, stuporous, disoriented woman with sordes, dry skin, dullness over the lower lobe of the left lung and a moderately distended and tender abdomen. The liver and spleen were palpable and tender.

Daily cultures of blood remained positive for E. typhosa, type A. One cubic centimeter of type A phage was administered in 500 cc. of a 5 per cent dextrose solution over a period of four hours, on Oct. 15, 1945. A mild chill occurred in an hour and a half and lasted thirty minutes. The temperature peak of 105.2 F. was reached in four hours, and the temperature returned to normal in nine and one-half hours after treatment began. It remained normal from this time forward. The patient was comfortable during the period of treatment, and although the blood pressure changed from 112 systolic and 72 diastolic to 98 systolic and 60 diastolic there was no evidence of shock. The most spectacular objective change was in her personality. From stupor she went to cheerful loquacity; whereas before it had been difficult to convince her that she must eat, it now became difficult to satisfy her enormous appetite.

SUMMARY

Type specific bacteriophage was used intravenously in the treatment of 56 patients with typhoid fever. Three patients had complications before treatment began, but recovery occurred. The mortality for the series was 5 per cent.

CONCLUSION

Treatment by means of type specific bacteriophage offers a promising and safe procedure against typhoid fever. Patients must have careful general care according to their particular needs. Type specific bacteriophage is the accepted form of therapy against the disease in the Communicable Disease Unit of the Los Angeles County General Hospital for all patients whose Eberthella typhosa organisms can be typed.

ABSTRACT OF DISCUSSION

DR. WILLIAM A. REILLY, San Francisco: The important point to this paper is that the phage is type specific. I think every one should realize that. Otherwise, as Dr. Hamilton has told me, it is hardly worth while to talk about the use of phage in typhoid; but this is a new departure and I think it will be admitted that Dr. Hamilton's results are spectacular and certainly worth while if some one else would check into this and try to repeat it on some of their patients in other parts of the country. Derrill, and Frederick Gay and Kruger and others who worked on phage in typhoid have stated that it is not helpful to any great extent except for occasional cases. This is an important contribution in the sense that we have heard a lot about streptomycin. In mouse typhoid it is very successful, but that is altogether a different picture than in man. There are a few cases reported of obliteration of fever and organisms from the body but, by far and large, the reports today on human beings have been disappointing. As one looks at these temperature charts one cannot fail to be impressed with the sudden critical drop in temperature and the concomitant improvement in the patient, as it were, waking up and wanting to eat and being very cooperative thereafter. Ninety per cent of these patients have been freed from many of the clinical manifestations of typhoid, and thereafter most of them have been freed from the organisms in their blood or stool. There is a great need for controlling typhoid all over the world. In Palermo the civilians told me that every year they have a thousand cases of typhoid in a population of 4,000 and think nothing of it. During the war typhoid was present all over the place, including our own army. There is a great place for the future development of something specifically curative for typhoid.

DR. WILTON L. HALVERSON, San Francisco: Any of you who have had the opportunity of working with the staff in contagious disease hospitals in Los Angeles on this program realize the great interest that we have in it. The spectacular nature of the recovery of these patients is something we don't forget when we see the patient go through the episode. Dr. Hamilton and Dr. Reilly have indicated that the death rate has been decreased. I took occasion to check our figures here in California for the last twenty years, and reported cases that we have had show a case mortality rate better than 14 per cent. These patients who came into the hospital were probably sicker than the ordinary run of patients. Therefore one would expect a proportionately higher fatality rate. I would like to emphasize that it isn't easy to prepare or to secure the bacteriophage. There must be a very close tie-up between the laboratory and the hospital ward: a prompt securing of blood cultures and then immediately, of course, developing the bacteriophage in the laboratory and making it available as soon as possible. The authors have indicated that this takes time. Type specificity in this field is extremely

helpful to the epidemiologist in tracing infections in epidemic serials. In California since 1939 we have traced six epidemics in which type specificity or the typing of the organism found in the patient was definitely of assistance in determining the source of the infection. One of these occurred just a year or two ago. I am happy to have had the opportunity to be associated with the staff of the contagious disease hospital in California. I believe this is a contribution which will be of great importance to us in typhoid.

THE USE OF RESIDUAL HEARING

A. C. FURSTENBERG, M.D.
Ann Arbor, Mich.

For many years deafness has been recognized as an exceedingly important public health problem in this country, yet concerted action on the part of health agencies toward the prevention and amelioration of this affliction has been productive of tangible results only within the past decade. While much has been said and written concerning the prevalence of hearing impairment and the extreme importance of bringing together some sincere and intelligent persons from the ranks of the medical sciences to study this problem and to find its solution, practical programs of action were not adopted until the beginning of World War II. The challenge was finally met by medical officers, public-spirited physicians and laymen, who through unity of thought and agreement formulated policies for a factual, nonemotional approach to the various phases of this affliction and established practical programs of service to those with impairment of hearing. Always in the past, the one great stumbling block has been the lack of satisfactory methods of treatment. For more than a century the leading apostles of public health and medicine in this country directed opinion to the real issues of prevention but admitted their inability to tackle the job of treatment step by step and to find a solution for the difficult problem of cure. Every time the insuperable barrier of lacking a precise knowledge of what to do for the hard of hearing patient was encountered, workers in this field veered sharply away from therapeutic considerations and returned to the original pronouncement so nobly, yet so futilely advocated—prevention.

I am a faithful advocate of a program of prevention in any and all fields of medicine. The medical profession must never fail to concern itself incisively with methods of preventing human suffering and affliction and to this end must strive for inexorable logic in dealing with this important phase of disease. However, most physicians will agree, I believe, that none of the present plans for the prevention of impaired hearing is ideal or perhaps even good. While some of them appear to operate successfully and possess accepted values, not many of them have been taken for granted by the members of the medical profession. I have never been convinced of the truth of the often published statement that 75 to 80 per cent of all cases of impaired hearing are preventable, and that this large proportion of its victims could have avoided their affliction had it been identified early and had proper methods of prevention been instituted. How can one prevent a degeneration of the auditory nerves which often occurs as the result of severe toxic diseases? By what method can one avoid otosclerosis? How are physicians to keep the eustachian tubes of children in working order and the middle ears free from infection during the course of diseases which infect the upper respiratory tract, particularly measles, scarlet fever, mumps and whooping cough? The latter diseases, in which manifestations on the part of the nose and throat invariably appear which endanger the ears, are everyday hazards to which children are exposed in spite of the most diligent enforcement of preventive measures. Prevention is an admirable policy, one that must remain the fiat of the medical profession, yet physicians must recognize its limitations. The point where prevention terminates and therapeutic procedures begin must be clearly discerned if practitioners are to achieve a solidarity of purpose and action that will function for the best interest of the person who is hard of hearing.

The statistical data pertaining to the incidence of hearing impairment in this country are exceedingly unsatisfactory and unreliable. There are specific reports on the occurrence of disease among animals and the increase and decrease of livestock in this country annually, but data on the various types and numbers of physically handicapped children are not obtainable. The scattered reports concerning the prevalence of impaired hearing among school children vary widely in different publications and are not based on acceptable sources of information and accurate compilation. My skepticism of the reliability of these data and my thirty years experience in a large clinic where many aural cases are seen daily lead me to express succinctly my disbelief of the frequently published statement that 75 to 80 per cent of all cases of deafness in the United States are preventable.

When the profession finally realized that it had reached an impasse in the road of progress in this important phase of medicine and that it was obliged to offer something more to the public than elaborate programs of prevention and expansive statistical compilations, scientific men in the field of otology began to study therapeutic measures that gave promise of restoring serviceable hearing to persons with impaired auditory function. Physicians and workers in the acoustic sciences began to make important observations in the treatment of deafness. These gave rise to theories which by careful experimentation in some instances were reduced to scientific facts. Today, some of these facts are being incorporated into practical usage. Certain methods of treatment appear to operate successfully and to possess values which seem to be understood and accepted. Outwardly, they appear safe and secure in the armamentarium of treatment for the hard of hearing. While there is much confusion and lack of understanding in the realm of therapeutics today, experimental studies and practical applications give hope of achieving a meeting of minds and a conformity of thought on these issues. I confidently believe that physicians have wisely directed the attention of research workers to the real problems of deafness and that they are rapidly formulating a program of therapy, which will establish a solidarity of purpose and action that will function admirably for the rehabilitation of persons with a loss of serviceable hearing.

Physicians recognize one form of impaired hearing, more frequently observed in children than in adults, which is due to some disturbance in the sound conductive mechanism of the ear, the external auditory canal, the tympanic membrane, the middle ear or the eustachian tubes. This form of auditory impairment is frequently due to an anomaly of pressure within

the middle ears brought about by an occlusion of the eustachian tubes. Here, the important etiologic factor is usually a mass of lymphoid tissue (adenoids) in the nasopharynx, encroaching on the orifices of the eustachian tubes.

The treatment of this condition is often simple. The adenoids are removed, care being taken to dispose of the lymphoid tissue about the orifices of the eustachian tubes. With the obstructive tissues removed and the patency of the tubes thus restored there is frequently a rapid return of normal auditory function. Unfortunately, however, all patients afflicted in this manner do not respond in such a satisfactory way; or if improvement in the hearing does occur, it is occasionally followed by a gradual recession which becomes more ominous as the child grows older. Thanks to the scientific contributions of Crowe and Guild, physicians are now equipped with a means of producing an atrophy and retrogression of lymphoid tissue by the application of radium. The use of radium in this type of deafness is an epoch in the progress of therapy and gives promise of saving or restoring serviceable hearing to children in whom the pathologic changes in the middle ear are due to an occlusion by lymphoid tissue of the eustachian tubes. It is important to emphasize that radiant energy which is properly utilized not only produces an atrophy of lymphoid tissue about the orifices of the eustachian tubes but acts in a similar manner on lymphoid tissue within the tubes themselves. One can often demonstrate in autopsy material that an abundance of lymphoid tissue is within the eustachian tubes when the mucous membrane surrounding the orifices is particularly free from this structure. For this reason, therefore, radium therapy is frequently indicated in those patients who present the type of hearing impairment and of changes in the tympanic membranes which are assumed to be caused by an occlusion of the eustachian tubes, even when inspection of the nasopharynx shows the regions of the orifices of the tubes to be free from encroachment by lymphoid tissue.

Today there is widespread interest in the surgical treatment of another type of hearing impairment to which reference must be made, namely, otosclerosis. This disease, characterized pathologically by the production of new bone about the oval window and the consequent ankylosis of the foot plate of the stapes, is a pathologic and clinical entity which has successfully concealed its etiology and has resisted all forms of medical therapy.

There is no way to determine the true incidence of otosclerosis among the millions of persons in this country who are hard of hearing. It has been variously estimated at from 5 to 30 per cent. In the clinic at the University of Michigan, approximately 10 per cent of the patients with auditory impairment present the symptoms and clinical observations of the condition termed otosclerosis. Although there is no unassailable proof that the objective and functional criteria for the diagnosis of otosclerosis are constant and correct, nevertheless, physicians recognize a type of auditory impairment called otosclerosis which has yielded encouragingly, in many instances, to surgical intervention. The pioneering work in operative technic designed to produce a new labyrinthine window to replace the obstructed oval window was done by Passow, Barany, Holmgren and Sourdille. In 1938, Lempert reduced the important technic of these eminent otologists to a practicable one stage operation, which stands today as the only therapeutic measure which has been of service to patients with otosclerosis. In expressing my attitude toward the one stage fenestration operation, I can do no better than to quote from one of the recent publications of Dr. George Shambaugh Jr.: "It seems clear that Lempert's work constitutes a contribution, and an important and outstanding one, to the development of the surgical treatment of otosclerosis, but that it should be regarded not as the final word but rather as another step forward in the development of a safe, reliable and effective means of improving the hearing in this disease."

The third type of auditory impairment, the common one in adults, is the so-called perceptive or nerve deafness. It represents a degenerative process in the nerves of hearing which, in many instances, is due to some severe toxic invasion of the internal ear or which seems to reflect hereditary influence in a certain proportion of patients. The vast majority of adult patients who come to the clinic on account of impaired hearing present this type of auditory disturbance.

The clinical picture is well known to all otologists; a progressive hearing impairment, frequently an associated tinnitus, negative objective observations and reduced hearing in the high register. The hearing by bone conduction usually parallels the loss by air conduction and is therefore at a low level in the higher ranges.

Here the physician must face the inexorable necessity of giving the patient an honest diagnosis, a true evaluation of the prognosis and a detailed program of rehabilitation, if he is to discharge properly his professional obligation.

It is futile to treat these patients by removing their tonsils, operating on their nose or inflating their eustachian tubes. Many of the patients insist that they are afflicted with the type of deafness which is due to disease of the eustachian tubes because physicians previously interviewed have left this impression with them. They bring their own diagnosis to the otologist. This is not the figment of their imagination, but they have been told on medical authority that they are afflicted with a disease of the middle ear which results from pathologic changes within the eustachian tubes. The patient with a nerve deafness must be given the true story of his affliction. He must be told what the future probably has in store for him and how, through mutual understanding and cooperation, he and the physician may work together to utilize to the fullest extent all residual hearing. Failure on the part of the physician to face the facts in a given case only serves to add to the patient's ultimate confusion and to squander valuable time that could be used effectively in restoring him to a useful place in society. On any other basis of patient–physician relationship, the afflicted person remains the implacable sufferer of deafness, and he and his friends raise their voices in scornful ridicule of the medical profession.

What is the responsibility of the physician to the patient with a progressive nerve deafness? At this point he must place himself on the block of self-analysis, explore his motives, evaluate his methods of treatment and give himself the right answers. I point with pride and with a deep sense of gratitude to those far sighted and efficient representatives of the Army and Navy who created an epochal program of service by the establishment and efficient operation of four centers for the

rehabilitation of the hard of hearing in military service. These important units located at strategic points in the United States, Deshon General Hospital at Butler, Pa., Borden General Hospital at Chickasha, Okla., Hoff General Hospital in Santa Barbara, Calif., and the United States Naval Hospital at Philadelphia, have done a colossal job and have achieved memorable progress in the care of the hard of hearing that will not fail to attain lasting recognition. The pioneers in this field wisely combined all available talents—those of the otologist, psychiatrist, psychologist, physicist, electrical and acoustic engineers and speech experts to function in an integrated and cooperative program that has rendered service of inestimable value to the unfortunate persons whose hearing was impaired in the line of duty. It remains now for civilian physicians and for public health and welfare agencies interested in this field to become familiar with the yeoman service of these great centers and to establish several more along similar lines, geographically located to render the greatest possible service to the people of this country. Unfortunately, progress in civic agencies is frequently slow, but the impetus given this magnificent program of service to the hard of hearing by military personnel is destined to inspire, if not demand, a similar plan of action in civilian life.

I have neither the time nor the ability in this discussion to describe precisely the types of service rendered in these Army and Navy centers. Nothing was left undone in an effort to overcome the patient's hearing handicap. Speech reading and articulate speech were taught, psychiatric therapy was rendered when it was indicated, and in instances where it seemed feasible and practicable the patient was fitted competently with a hearing aid. At the risk of pointing out the obvious, I should like to emphasize the value of well fitted hearing aids and to enumerate some of the essentials in their application.

First, it must be said that a hearing aid cannot be prescribed in the same manner as can eyeglasses. The latter merely serve to obtain a better focus on the retina of the same rays of light that are perceived by the unaided eye. The hearing aid, on the contrary, does not transmit the characteristic stimuli that are received by the normal ear. It conveys new and different impulses to the brain, and these have little meaning to the person until his cerebrum has learned to interpret them. It is like one's first experience with a foreign language. The ears have the power of perceiving the auditory sensations of the language, but one has no capacity for understanding them until the brain has gained an appreciation of their meaning. A hearing aid is nothing other than a public address system. It has a battery and a transmitter which amplifies sounds, but the sounds are distorted. Only a few days ago I was appalled at my inability to understand a single word that was being said by a train caller in a railroad station in Richmond, Va. This southerner, speaking the local dialect of his part of the country, was conveying a message to me in a foreign language which it was beyond my ability to comprehend. Yet my host, a native of Virginia, accustomed to the provincial mode of expressing thought, understood him perfectly and derided me for my uninstructed and uninformed auditory sense. The perception of sound is one thing, but its interpretation is quite another. The power to interpret sounds conveyed through a hearing aid often requires weeks or months of diligent effort and study on the part of the patient. He cannot adjust himself to one of these instruments in two or three days. He must learn a new language, and this can be acquired only by a long period of tireless effort and adjustment. I venture to state that there are more hearing aids in bureau drawers today than there are in active use by the hard of hearing. In most instances, this circumstance is the result of the patient's ignorance of the necessity of training his brain to interpret new impulses; in short, the necessity of learning a new language. The so-called listening hour, the daily period of concentration and comprehension with a hearing aid which is in vogue in the Army and Navy rehabilitation centers, is an outstanding feature of the program of interpretation and understanding of conversation for the patients whom it serves.

The question is often asked, how much of the time should the hearing aid be worn? The answer is all the waking hours of the day. The patient should adjust the hearing aid in the morning when he arises and wear it until he goes to bed at night. I am opposed to the program of wearing an aid only when the patient goes to the theater, a lecture or a business conference. Only by constant use of the aid will he become accustomed to it and learn to dissociate himself from extraneous noises and to accept those which have meaning to him. In this connection, the Baltimore experiment is both interesting and revealing; here little children with impaired hearing make admirable use of their hearing aids. They have been taught to wear them the whole day through, and their devotion to this edict is often carried to the extreme (much to the consternation of the public health nurse) of wearing the aid while in swimming. Although this is undesirable from an economic point of view, it is nevertheless a gratifying demonstration of the child's ability to adjust himself to the hearing aid.

To which ear, the good or the poor one, should the hearing aid be fitted? For many years patients were instructed to use the aid in the poorer ear. When the old, inadequate and unreliable carbon sets were on the market, they were usually applied to the ear with greater impairment and frequently credited with efficiency by the patient. I am convinced, however, that in many instances the only service they rendered was to signal that the wearer was deaf and thereby to induce his associates to speak loudly enough to be heard by the better ear. The hearing aid should be fitted to the ear with lesser impairment. If applied to the poor one, it may serve sufficiently well to transmit distorted sounds with which normal impulses to the good ear will combine to furnish the brain with two different languages; variant types of impulses are confusing and add greatly to the patient's difficulties of interpretation. If the auditory function in the poor ear is not serviceable, it is well to ignore it; fit the hearing aid to the good ear and train the patient to interpret only those sounds which are transmitted through the instrument.

Otologists are often asked whether an air conduction or a bone conduction aid should be employed by a given patient. If a perfectly fitting earpiece is provided, there is usually an advantage in using the air conduction instrument. A well made and accurately fitted earpiece which can be purchased for from 10 to 12 dollars serves admirably to convey sounds through the canal and also, to some degree, by bone conduction. One need not pay too much attention to the audiogram in determining whether or not a hearing aid should be used. It has

been arbitrarily decided among otologists that if the patient has lost 35 decibels of hearing in the speech range, he should be advised to employ an aid. I give little credence to this dictum. If the patient is unable to hear a conversational tone of voice and is thereby incapacitated for his daily business and social relationships, a hearing aid should be recommended regardless of the curve expressed by the audiometer. In most instances it will be found that the air conduction instrument with a well fitting earpiece is the one of choice.

It is often asked, "does the hearing aid stimulate the nerve of hearing and improve auditory function, or does it have the opposite effect and hasten the progress of nerve deterioration?" I believe it can be said that hearing aids have neither effect. For many years doctors were remiss in that they told patients that the use of a hearing aid was like whipping the tired horse; productive of momentary gain, but eventually disastrous. There is no scientific proof for such an assumption. By the same token, energetic and not too well meaning salesmen have occasionally told patients that hearing aids furnished desirable stimulating effects of therapeutic value to the degenerated nerve of hearing. This is certainly not a statement of fact. It savors of high pressure salesmanship which fortunately is not in universal usage and certainly is not condoned today by the ethical manufacturers of hearing aids. I mention this criticism not solely in a spirit of derision but, more importantly, to correct a faulty premise, should it exist in the minds of those who are merchandizing hearing aids. Disparaging words concerning the efforts and accomplishments of laymen in this field would not be in good taste at this juncture. I do not know of a single medical man in civilian life who has contributed scientifically to the production of hearing aids or to the humanitarian distribution of these instruments. Until the medical profession emerges from this ignominious position, expressions of criticism are not in order.

SUMMARY AND CONCLUSIONS

1. With the advent of national and practicable therapeutic measures significant progress is being made today in the rehabilitation of the hard of hearing. Noteworthy among these methods are: (*a*) the use of radiant energy in the destruction of lymphoid tissue responsible for occlusion of the eustachian tubes; (*b*) the Lempert fenestration operation for otosclerosis, and (*c*) the extraordinary service rendered by the Army and Navy rehabilitation centers to men in uniform.

2. The program of therapy, although in its infancy, has attracted the interest of men of science and has acquired sufficient impetus to carry it through epoch-making years of progress in this important field of public health.

3. The greatest humanitarian contribution that could be made today to persons with disabling hearing impairments would be the establishment of rehabilitation centers like those of the Army and Navy in strategically located parts of the United States.

The efficiency of the service rendered by these installations has been of such outstanding and inestimable value to the military personnel that it must not be denied to the millions of afflicted persons in civilian life. Members of the medical profession must face this responsibility with a clarity of objective and a precision of action.

Clinical Notes, Suggestions and New Instruments

SERIOUS AIR EMBOLISM DURING BLOOD DONATION

GEORGE R. MENEELY, M.D.
and
E. BUIST WELLS, M.D.
Nashville, Tenn.

A partial review of the literature revealed a number of instances in which air was unintentionally injected into the veins of a blood donor,[1] but usually this has been due to faulty equipment or to error in assembling the apparatus, so that air was literally pumped into the donor. There are doubtless other unreported instances of fatal or near fatal air embolism occurring during blood donation; two are known to us. McLean [2] reports an instance in which air injection was narrowly averted and indicates that on many other occasions there was incontrovertible evidence that positive pressure had developed in donor sets without the assistance of pumps. The explanation of the development of pressure offered in his report is incomplete, however, and it is our aim in this paper to analyze a recent serious accident and to show an important and apparently unrecognized means whereby strong positive pressure may develop in closed donor sets or sets which may become closed.

REPORT OF CASE

An apparently healthy female blood donor aged 36 reclined on the table in the routine manner. An evacuated blood bottle containing 50 cc. of sterile sodium citrate (Cutter Laboratories, 1-T "Saftifuge") was connected to a piece of translucent gum rubber tubing by perforating the rubber bottle stopper with a needle, as in the illustration. The tubing was first occluded by the roller pinch cock, which is an integral part of this donor system to preserve the vacuum in the bottle. A needle at the other end of the tubing was inserted in the patient's right antecubital vein. It was the opinion of the experienced blood bank technician that it was a thoroughly satisfactory venipuncture. Blood entered the bottle briskly at first, but soon the flow slowed, then stopped. There was 320 cc. of blood in the bottle at this time. Twice during the period of withdrawal gurgling sounds of an unusual nature were heard by the operator, which she ascribed to borborygmi on the part of the patient. Later the patient stated that she too had heard these sounds but that it had seemed to her that they came from the location of the needle and tubing. The needle was withdrawn with precautions to prevent loss of vacuum by closing the pinch cock on the tubing. The other needle was withdrawn from the bottle and a fresh piece of rubber tubing with its associated needles was attached. At this time it was observed that a hematoma had developed at the site of the entered vein, which seemed unusual to the technician because it had been such a satisfactory venipuncture. Meanwhile the opposite arm had been prepared. The same bottle with its new tubing was carried around the patient and a vein in the left antecubital fossa was entered cleanly. At this point the bottle was laid on its side according to the customary procedure and the pinch cock slowly opened. Blood at once began to rise out of the bottle into the translucent tubing and had traversed perhaps 4 or 5 inches when the operator observed it and immediately closed the pinch cock. She recognized that something was amiss and preparatory to withdrawing the vein needle she released the tourniquet. The air which had been compressed in the fresh empty tubing ahead of the rising column of blood then entered the vein. The volume of air could not have exceeded a few cubic centimeters at the most.

From the Department of Medicine of the Vanderbilt University School of Medicine.

1. Kinsella, V. J.: A Blood Transfusion Accident, M. J. Australia **1**: 690 (May) 1941. Brown.[2]

2. McLean, J. A.: Note on the Possibility of an Air Embolism When Blood Is Taken from a Donor with the "Soluvac" Transfusion Bottle, M. J. Australia **1**: 162 (Feb. 20) 1943.

Subsequent events transpired rapidly. In a moment the patient emitted a piercing shriek and immediately became intensely dyspneic, hyperpneic, tachypneic and profoundly agitated. Subsequently she described a sensation at the time of the air injection ". . . like water and air mixed in a bottle . . ." in the upper anterior part of the left chest, in the region overlying the pulmonary conus. As she continued to hyperventilate, clinical evidences of moderate tetany appeared. Gradually the described signs subsided, although the donor continued quite agitated for some little time thereafter.

Careful physical examination shortly after the onset of symptoms failed to reveal any abnormalities of the heart, the lungs, the eyegrounds or the central nervous system, although the examiner (E. B. W.) was alert to the manifestations of air embolism, having recently studied a case which occurred during therapeutic pneumothorax administration. A roentgenogram of the chest and an electrocardiogram with serial precordial leads revealed no abnormalities. Within an hour or so the patient

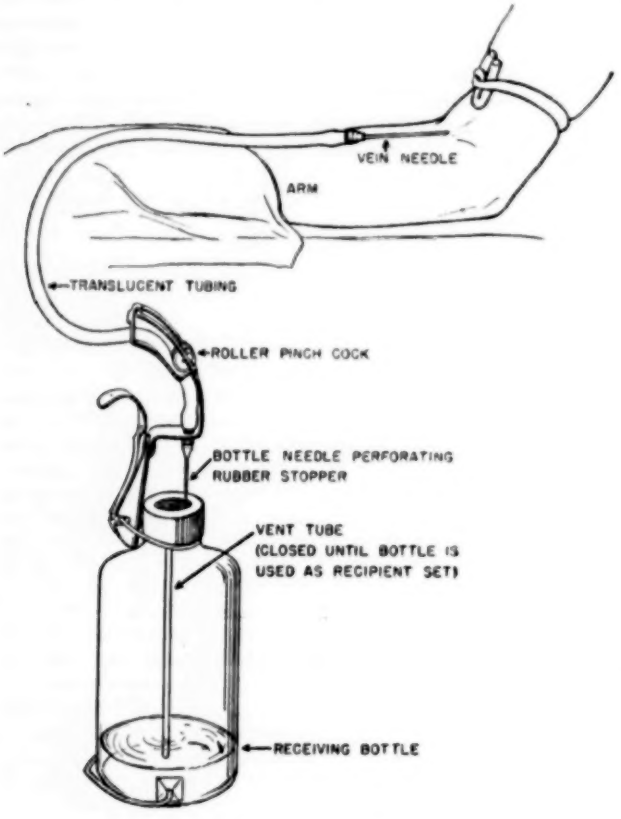


Diagram of vacuum type donor set.

appeared to be entirely comfortable and had no complaints. She was allowed to go home late in the afternoon of the accident. Aside from sequelae natural to the intense psychic trauma, she had no further difficulties.

The donor bottle was examined and there was sufficient positive pressure half an hour after the accident to push the piston of a vertical syringe well up in the barrel.

MECHANISM OF DEVELOPMENT OF POSITIVE PRESSURE IN CLOSED DONOR BOTTLES

In the "Soluvac" system described by McLean [2] blood enters the bottle by force of venous pressure and gravity displacing air through a second perforation in the rubber bottle stopper. In each case in which positive pressure developed, a bit of rubber was found occluding the vent needle, preventing escape of air as the blood entered. The development of positive pressure was ascribed to compression of the trapped air in the bottle by the pressure in the patient's vein distal to a tourniquet, and he suggests that danger from this pressure would occur "should the pressure in the vein of the donor fall."

In our case there should not have been any substantial amount of air in the bottle initially. The functioning of this system depends on evacuation of the bottle by the commercial producer to facilitate the flow of blood from the donor. The sounds heard by the donor and the attendant suggest that air entered through an undetected leak in the system during the first phase of the procedure and that at the time the blood flow stopped there was gas above the blood compressed by the pressure in the donor's vein plus the gravity effect of the column of blood extending down to the bottle.

This explanation neglects an agency potent in developing elevated gas pressures, namely the warming of air at room temperature toward blood temperature. If gas which enters a rigid vessel at room temperature and atmospheric pressure is trapped there and then raised to blood temperature a surprising increase in pressure will occur. Neglect for a moment the pressure which might have been contributed by the venous pressure of the donor. Suppose after the 320 cc. of blood had been drawn that air leaked into the bottle freely but was trapped there by a valve action of the perforation of the rubber stopper diaphragm possibly assisted by droplets of blood on the hole. The room temperature at the time of the accident was 24 C. and the barometric pressure was 750 mm. of mercury. The blood initially was at 37.5 C. Some of the heat of the blood would be contributed to the air above it. The pressure would rise according to the law:

$$\frac{P}{T} = \frac{P'}{T'}$$

Where: P = initial pressure (750 mm. Hg in this case)
T = initial temperature (297 absolute in this case)
P' = final pressure
T' = final temperature (approximately 310.5 absolute in this case, i. e. blood temperature).

If trapped gas actually attained the temperature of blood, the new pressure would be 783 mm. of mercury, that is, an excess over room pressure of 33 mm. of mercury, or 449 mm. of water.

The vapor pressure of water at 24 C. is 22.4 mm. of mercury. At body temperature it is 48.3 mm. of mercury. A pressure difference approaching 25.9 mm. of mercury would further contribute to the driving force of pressure developing in the bottle.

In a number of trials with a donor bottle like the one with which the accident occurred, various pressures could be obtained by admitting and then trapping air in the evacuated space over water at blood temperature, the highest observed being 180 mm. of water. Doubtless further trials would have revealed still higher pressures, approaching perhaps the theoretical possibilities mentioned. It is apparent that air trapped in a blood donor bottle and compressed by the venous pressure distal to a tourniquet and then raised from room toward body temperature might generate pressures much higher than the one calculated.

It appears from the accident reported by Brown [3] and from the experience recorded here that the tourniquet is a safety factor because in both instances the disaster occurred after the tourniquet was released. On the other hand, in the experience of McLean [2] pressure sufficient to force air against the pressure in the vein distal to a tourniquet did in fact develop.

COMMENT

There are statements in the literature [4] indicating the innocuousness of "4 or 5 cc." of air injected intravenously, and all concerned have seen air injected without untoward result on occasion. The general confidence in the harmlessness of intravenous air is accentuated by experience with animals under anesthesia which commonly tolerate large air embolism. The situation of rapid injection in the unanesthetized human being is different, however, and the evidence indicates that confidence in the harmlessness of air embolism is unwarranted.

Simpson [5] has listed 56 cases of fatal air embolism which have come to his attention. The volume of air injected in

3. Brown, G. F.: Intravenous Injection of Air Fatal to Blood Donor, Anesthesiology **4**: 202 (March) 1943.
4. Moore, J. E.; Kemp, J. E., and others: The Modern Treatment of Syphilis, ed. 2, Springfield, Ill., Charles C Thomas, Publisher, 1943.
5. Simpson, K.: Air Accidents During Transfusion, Lancet **1**: 697 (June) 1942.

many could not have exceeded 10 or 15 cc. The speed with which air is injected is important in the lethal dosage determined experimentally.[6] The conditions which precipitated the accident under discussion were such as to guarantee a high velocity of injection. Manifestations which followed the air injection were convincing that pulmonary air embolism had really occurred. Since the volume of air in this case was a very few cubic centimeters, doubt was expressed by some that the event was due to the air at all. The evidence on this point however is overwhelming. The patient described spontaneously the sensation of mixed air and liquid in the region of the pulmonary conus. The subsequent manifestations were entirely typical of pulmonary embolism of medium sized vessels,[7] that is dyspnea, hyperpnea and tachypnea. So great indeed was our patient's forced ventilation that she developed a relative alkalosis manifested by tetany. It was fortunate that the amount of air was small or else more serious and possibly fatal sequelae might have developed. Death from air admitted to a peripheral vein comes about either through mechanical obliteration of the pulmonary capillary bed, central nervous system embolism or coronary embolism.[8] There is no longer any doubt that air can traverse the pulmonary capillary barrier and gain access to the arteries of the greater circuit.[9] Although the evidence that a vagus reflex can cause death from a pulmonary embolism without sufficient mechanical interference to result in anoxemia or excessive right heart loading is unconvincing,[10] yet if the "stage is set" by debility of the patient this seems a possibility in view of the very profound disturbances observed in our patient. The meditation of the respiratory disturbances described is probably via stimulation of sensory nerve endings which exist in the vessels of the lung [11] and certainly involves passage via the vagus, for in the experimental animal the effects can be suppressed by bilateral vagus section.[7]

SUMMARY AND CONCLUSIONS

1. Air embolism occurred during a blood donation. The air embolism occurred as the result of development of positive pressure in the blood receiving bottle.

2. Two methods exist whereby positive pressure can develop in blood donor bottles which are closed intentionally or by accident: (*a*) by trapping air over the accumulating blood and compressing it by the venous pressure of the donor vein distal to a tourniquet; (*b*) by trapping air at room temperature and warming it toward blood heat.

3. The second method alone is probably capable of causing a rise in gas pressure within the donor bottle in excess of that likely to exist in a donor vein distal to a tourniquet.

4. Both methods probably contributed to the reported instances of retrograde air flow during blood donation.

5. The tourniquet on the donor's arm is a safety factor tending to prevent air embolism: it should never be removed until the needle is withdrawn when something seems to have "gone wrong" with the bleeding.

6. Alertness to the possibility of positive pressure developing in closed donor bottles should serve to prevent further accidents of the sort reported.

7. A second vein should never be entered with equipment partly filled from another vein because development of positive pressure may have been the reason for arrest of the flow and because attendant manipulations offer too many opportunities for air leaks with subsequent warming of the trapped air to dangerous pressures.

6. Richardson, H. F.; Coles, B. C., and Hall, G. E.: Experimental Gas Embolism: I. Intravenous Air Embolism, Canad. M. A. J. **36**: 584 (June) 1937.

7. Megibow, R. S.; Katz, L. N., and Feinstein, M.: Kinetics of Respiration in Experimental Pulmonary Embolism, Arch. Int. Med. **71**: 536 (April) 1943.

8. Fine, J., and Fischmann, J.: An Experimental Study of the Treatment of Air Embolism, New England J. Med. **223**: 1054 (Dec. 26) 1940. Simpson.[5] Bierhaus and Hintze.[10]

9. Rangell, Leo: Cerebral Air Embolism: The Question of Arterialization of Intravenous Air Across the Barrier of the Pulmonary Capillaries; Report of a Case Following Assumption of the Knee-Chest Position Post Partum, with Recovery, J. Nerv. & Ment. Dis. **96**: 542 (Nov.) 1942.

10. Bierhaus, H., and Hintze, H. E.: Ueber die Todesursache bei venöser Luftembolie: Experimentelle Untersuchungen des grossen Kreislaufes und der Atmung, Arch. f. klin. Chir. **201**: 1 (Feb.) 1941.

11. Larsell, Olof, and Dow, R. S.: The Innervation of the Human Lung, Am. J. Anat. **52**: 125 (Jan.) 1933.

OXIDIZED CELLULOSE GAUZE PACKING FOR NASAL BLEEDING

KARL MUSSER HOUSER, M.D.
Philadelphia

The rhinologist and the general practitioner will find many uses for oxidized cellulose gauze packing. In November 1945 Frantz and Lattes [1] described this preparation and their initial experiences with it in various types of wounds. It is particularly valuable in securing hemostasis in certain nasal conditions. Spontaneous nasal hemorrhages that cannot be controlled by cauterization and therefore require packing are much more easily managed when this type of packing is used. Quite often when nonabsorbable gauze packing is used, even though the bleeding is controlled there is recurrence shortly after the packing is removed, mainly because of the adherence of this packing to the hemorrhagic mucosa. With ½ inch oxidized cellulose gauze packing [2] this does not occur. It is inserted in sufficient quantity and with sufficient pressure to control the bleeding but is never removed. In about thirty-six hours too much disintegration has occurred to permit removal with forceps, and twenty-four hours later it is a jelly-like mass that comes away without instrumentation. This packing is both hemostatic and absorbable and does not produce the foul condition in the nose always observed when regular gauze packing remains in place for forty-eight hours or more.

In some cases a regular postnasal pack must be used and the cellulose gauze packed tightly against this pack. The postnasal pack is removed the following day, but the cellulose gauze remains in place until liquefaction occurs.

This packing has been found to be quite useful in lightly packing the ethmoidal regions following ethmoidal surgery, when bleeding has been too profuse to ignore. Here too it is not removed, as it eventually liquefies and is discharged. To date infections have not been observed in this type of case. It is also useful in the office following the removal of polypi or antral puncture when bleeding is too profuse to allow the patient to go home without packing. Enough cellulose gauze packing is introduced to control conditions, and the patient is allowed to return to his home or to work. It is not necessary for him to return the following day for removal of this packing.

I have used this type of packing so far in about 50 cases of nasal bleeding secondary to traumatic, surgical or spontaneous causes. The results have been vastly superior to those secured with regular gauze packing.

2035 Delancey Street, Philadelphia 3.

1. Frantz, V. K., and Lattes, R.: Oxidized Cellulose-Absorbable Gauze, J. A. M. A. **129**: 798 (Nov. 17) 1945.

2. Packing used, ½ inch Hemo-Pac, supplied by Johnson and Johnson. From the Presbyterian Hospital of Chicago.

FIBROMA OF THE SCROTUM

HERMAN L. KRETSCHMER, M.D., Sc.D.
Chicago

Little has appeared in the literature on tumors of the scrotum proper, owing to the fact that they are very uncommon. Many authors who have reported on tumors of the scrotum have included tumors of the testicle proper, the testicular tunics and the epididymis and neoplasms originating from the spermatic cord.

The most common types of tumor usually found in the scrotum proper are angiomas, lipomas, epitheliomas and cysts. A search of the literature for the past thirty years reveals no cases of pure fibroma of the scrotum proper, and it is because of the rarity of this type of tumor that this case is briefly presented. Recent standard textbooks do not give any information on scrotal fibromas, and the earlier published textbooks dismiss the subject with simple statements that fibromas of the scrotum are of infrequent occurrence. Those earlier cases referred to as "fibromas" undoubtedly would not be so classified in the light of present day knowledge and histologic classification of tumors. Many were reported as tumors of the scrotum that were in reality tumors of the testes.

I have been able to find only 2 reported cases of scrotal tumors presenting fibrous tissue, and they were not pure fibromas. Livermore [1] in 1933 published the report of a case of lipomyxofibroma in a man aged 45, and the tumor was not attached to the cord or in any way connected with the external abdominal ring or the inguinal canal. The other case was reported by Lombardi [2] in 1934 of a fibrolipoma of the scrotum. These are not true fibromas.

REPORT OF CASE

H. C., a man aged 75, admitted to the Presbyterian Hospital on April 25, 1946, complained of nocturia of ten years' duration, frequency of urination during the day for ten years, diminution in the size of the stream, and straining in order to start the act of micturition.

Twenty-five years before the patient had noticed a small, hard, painless nodule in the right side of the scrotum. This continued to increase in size very slowly for ten years. It attained the size of a chestnut. It has not increased in size, as far as the patient can tell, during the past eighteen years, nor has it caused him any pain. The rectal examination showed enlargement of the prostate. The blood pressure was 200/80. X-ray examination, intravenous pyelograms, blood chemistry and the examination of the urine were all negative.

Examination of the right side of the scrotum showed the presence of a very hard mass the size of a chestnut. This mass is in the scrotum and is not connected to the testes or the epididymis. It is very hard in consistency and not tender.

Transurethral resection of the prostate was performed on April 27. At the time of the resection the scrotal tumor was excised. The patient made an uneventful convalescence and was discharged from the hospital on May 7.

Pathologic examination by Dr. George Hass revealed that the specimen measured 3 cm. in length by 2 cm. in diameter. The nodule was rubbery in consistency and was surrounded by a light pink connective tissue. The cut surface was light gray to light yellow, and the cut surfaces consisted of trabeculae which were light gray to light yellow. The surface bulged. The tumor was composed of large cells that resembled fibroblasts. The nuclei of the cells were especially prominent. There were no multinucleated cells. No mitotic figures were found. The cells were widely separated from one another by a considerable amount of collagen. There was no definite encapsulation. It was slowly growing and not sharply encapsulated. The diagnosis was fibroma of the scrotum, slowly growing and nonencapsulated.

122 South Michigan Avenue.

HABITUAL HYPERTHERMIA: PREMENSTRUAL "FEVER"

HOBART A. REIMANN, M.D.
Philadelphia

In 1932 under the title of Habitual Hyperthermia I [1] reported the case of a woman aged 23 whose temperature had often been above the average normal for eighteen years. The "fever" led a succession of physicians to seek for infection or other causes of it and led to a long period of unnecessary, enforced semi-invalidism. On prolonged study the temperature was shown to have a regular relation to the menstrual period. It was normal or subnormal during the first half of the menstrual cycle, rose to levels higher than normal at the midperiod when the follicle matures [2] and persisted at high levels until the day before the menses, when it dropped again.

In the majority of women the rhythmic fluctuation of the temperature seldom exceeds the average normal level of 37 C. (98.6 F.) and is usually unnoticed unless careful registrations are made. In certain otherwise normal women whose temperature rises above normal, prolonged and unnecessary search for the cause of "fever" is often made unless the temporal relation of the fluctuation to the menstrual cycle is recognized. The problem of diagnosis is greater when a neurosis also is present.[3]

At the time the report of the case was published it was planned to observe the effect of the course of time and especially of pregnancy on the cyclic temperature curve, but the patient married and lived in China until recently. During that time there were six pregnancies, resulting in 4 living normal children, an attack of typhus, several bouts of malaria and the usual hardships in a war torn country. Unfortunately the exigencies of living prevented measurement of the temperature during the periods of pregnancy. No further study was made until the patient returned to this country in September 1945, fourteen years after the previous report was made. Registration of the temperature twice daily over two menstrual cycles revealed the usual course of events with low temperature of 36.1 C. (97 F.) from the first day of the menstrual period to the midperiod, an abrupt rise to 37.4 C. (99.3 F.), then a fall to subnormal the day before the next period. No other signs or symptoms occur.

While the periodicity of the "fever" in the childhood of the patient is not known, temperature at fever levels was first noted at the age of 5 and has continued, later in rhythm with the menstrual period, for thirty-two years. It will be of interest to see what effect the menopause will have on the temperature.

1. Livermore, G. R.: Lipomyxofibroma: Case, Brit. J. Urol. **5**: 49-54 (March) 1933.
2. Lombardi, R.: Rare Case of Fibrolipoma of Scrotum, Riforma med. **50**: 563-564, 1934.

From Jefferson Medical College Hospital.

1. Reimann, H. A.: Habitual Hyperthermia, J. A. M. A. **99**: 1860-1862 (Nov. 26) 1932.
2. Oral Basal Temperatures and Ovulation, editorial, J. A. M. A. **131**: 32 (May 4) 1946.
3. Reimann, H. A.: Habitual Hyperthermia: A Clinical Study of 4 Cases with Long Continued, Low Grade Fever, Arch. Int. Med. **55**: 792-808 (May) 1935; The Problem of Long Continued, Low Grade Fever, J. A. M. A. **107**: 1089-1093 (Oct. 3) 1936.

Council on Pharmacy and Chemistry

REPORT OF THE COUNCIL

The Council has authorized publication of the following statement. AUSTIN SMITH, M.D., Secretary.

CABASIL (CABASIL, INC.): QUACKERY UNLIMITED

For over five years the Bureau of Investigation and the Council on Pharmacy and Chemistry of the American Medical Association have received sporadic inquiries (mostly from physicians) concerning one or more of a series of products sold under the name Cabasil in the following various dosage forms: oral, enema, rectal ointment, suppository (rectal and vaginal), powder, nose and throat powder, surgical powder, concentrate fluid, implants ("seeds"), ointment (mild), concentrate ointment (strong), foot powder and other special forms, such as capsules for prevention of water-borne infection. It has not been possible to determine positively from information contained in the files of the Bureau and the Council whether or not all of these have the same basis of composition or that they represent a complete and current list of products sold under the name Cabasil. In November 1940 an inquiring physician wrote to the Bureau of Investigation:

> This name applies to a variety of forms in which a mixture of substances is made for topical application to chronic infectious sinuses, such as those commonly seen in chronic osteomyelitis. It is a proprietary. . . . I believe the "CA" part refers to its calcium content, the "BA" to barium, etc., but I know nothing of the accurate formula or of its rationale. . . .

At one time Cabasil was said to have been put out by Faucett & Porter of Philadelphia, but more recent information indicates that it is marketed by a concern known as Cabasil, Incorporated, 800 Bankers Security Bldg., Philadelphia.

During the late war the promoter, one Stuart Kabnick, D.D.S., made some effort to interest a research organization engaged in war work in Cabasil (in the forms of liquid, powder, ointment and "seeds"), principally for use by the armed forces in the treatment of battle casualties, but he refused to reveal the composition. Because of considerable political pressure, the research organization asked a group of consultants to review the claims made by Dr. Kabnick for use of the preparation in wounds and burns. After a preliminary investigation this group

concluded that the claims were supported only with inaccurate "testimonials" and that there was no warrant for further investigation of this proprietary remedy to have it recommended to the armed forces. In fact a trial of the ointment on the standard ear wound preparation used in testing wound healing showed that healing had been definitely retarded. Furthermore, it was pointed out that the "seeds" were not sterile, as they were packaged in unsterile envelops and no directions were given for sterilization of any of the preparations.

Early in 1945, at the request of the Association's Bureau of Investigation, the American Medical Association Chemical Laboratory reported as follows on a package of powder labeled Cabasil Oral:

> The A. M. A. Chemical Laboratory has examined Cabasil Oral (Cabasil, Inc.) and finds it to consist essentially of a mixture of magnesium oxide, magnesium hydroxide and barium sulfate, together with a small amount of organic substances such as iodoform.

There were no directions or list of ingredients on the label. More recently, information supplied from another source indicates that there is available at least one specimen of a label sticker bearing the statement:

> CONTAINS: CALCIUM, BARIUM, SULPHUR, IODINE, LACTOGIN, METACRESOL.

This list of ingredients evidently explains the meaning of the final syllable in the name of the product, Cabasil, to which, in the particular form represented by the foregoing label statement, metacresol has been added. Presumably for the oral form examined at the A. M. A. Chemical Laboratory, the name was considered an adequate substitute for indicating the constituent ingredients, though magnesium was evidently substituted for calcium.

The sources of distribution of Cabasil appear to stem primarily from the promotional interest of the aforementioned Dr. Stuart Kabnick, a practicing dentist of 326 South Twenty-First Street, Philadelphia, who appends his name with the title F.A.I.C. (Fellow American Institute of Chemists). Letters to one organization from Dr. Kabnick early in the war bore the address Twenty-First and Delancey streets, Philadelphia, the same as that attributed to the "Pennsylvania Institute of Chemurgic Therapology," used as a caption for a mimeographed leaflet promoting Cabasil and its claimed mode of action in inflammatory processes. Apparently this institution serves as an advertising outlet for the "research" activities of Dr. Kabnick, who formerly loomed large in the promotion of a series of dental products marketed under the name "R. C. F." by Lindley Laboratories, Inc., 1510 Lindley Avenue, Philadelphia. These were the subject of an adverse report over ten years ago by the Council on Dental Therapeutics of the American Dental Association.[1] The report pointed out that Dr. Kabnick was president of the aforementioned concern and that his R. C. F. preparations were nothing more than well known drugs or combinations put out under secrecy and at exorbitant prices: The "R" solution was found to be approximately a 40 per cent solution of silver nitrate; the "C" solution of variable composition, at times being a solution of mercuric iodide in potassium iodide, at others an aqueous solution of mercuric iodide in potassium iodide and magnesium chloride; the "F" powder represented by a mixture of barium sulfate, magnesium oxide, zinc oxide, calomel and thymol iodide. That Council criticized both the claims made in advertising and the extravagant statements contained in a published paper by Dr. Kabnick.[2] The composition of his R. C. F. preparations is seen to resemble that now attributed to Cabasil products.

The advertising distributed for Cabasil apparently consists of the following: The aforementioned "Institute" leaflet; a two page outline entitled "Cabasil, Forms, Indications for Use"; a mimeographed circular entitled "Critical Comparison of Sulfa Drugs, Penicillin, Cabasil," tabulating various criteria for comparison of these three remedies, and an untitled mimeographed statement on "The advantages of the use of the simple Cabasil technique. . . ." At least the first and last two mentioned pieces have had more than one version, the text evidently being subject to change at the convenience of the promoter.

The "Institute" leaflet consists essentially in an expansion of the theory previously advanced by Dr. Kabnick in another paper[3] on his "technic" of disinfection of septic teeth with R. C. F. preparations. In it the author promulgated absurd criteria for chemical disinfection and filling of dental root canals on the basis that weak organic acids formed by "bacterial metabolism" destroy the alkalinity of bone "(necrotic bone shows a *p*H of 4.5 to *p*H 5.5)." With this unsupported observation he proposed that chemical medicaments used in disinfection should be alkaline, should be nonconductors of heat and electricity (to avoid disturbance of "biochemical reactions"), possess a slight degree of expansion, be slow to "set" and have bland yet "prolonged disinfective powers." The author extolled the virtue of iodine as a germicide; the purpose of barium in the R. C. F. "F" powder was explained on the basis that its opacity to roentgen rays is useful to observe "progress of chemotaxis" or permeation into the root canals of teeth. Not one of these statements was supported by data to indicate on what evidence they were based. The pseudoscientific nature of Dr. Kabnick's observations is further illustrated by the following quoted portion of the ludicrous instructions contained in his paper:

> Do not use any other chemicals such as alcohol or chloroform. Never mix technics unless you are doing research work. Place two or three drops of R. solution on a clean slab and mix into this fluid several pinches of F. powder. (Use your college pliers.)

One of the "Institute" leaflets distributed on behalf of Cabasil harks back to this theme of the acidity of necrotic tissue and mentions the use of "alkaline metals *" of Cabasil "to buffer the fluids of the inflammatory process back to a normal *p*H 7.5." The asterisk is footnoted with a single reference to Kabnick's last mentioned dental report of twelve years ago (author and title omitted)! It is further claimed that calcium "stabilizes the osmotic pressure necessary for cell growth, proliferation and repair . . ."; that sulfur "shares the oxidation of the protein molecule in the animal body, which it leaves to return to the soil from which it was taken by plant cells"; that "iodine and traces of silver present in some of the different forms have a bacteriostatic influence in the milder concentration but exert a bacteriocidal influence in the higher concentrated solutions"; that "'Lactogen' (a partially digested sugar) is a source of nutriment at the site of injury and is especially important if all the vessels leading into the area of pathosis have sloughed or are blocked by leucocytic emboli"; and so on ad nauseam! The last portion of this leaflet reverts to the use of the first person singular with the following statements: "In this work, I have arrived at the conclusion that a heretofore unmentioned or described giant cell ** indicates great 'staying' powers in the presence of Cabasil. As long as my criteria for all life are answered, the giant cell demonstrates that it is the strongest defender in the body (this thought is the converse of general opinion, however, this is explained in detail in a paper to be published soon)." The double asterisk refers to the following footnote: "Many of my friends have spoken of this giant cell as the Kabnicyte."

Thus does it appear that Dr. Kabnick puts words into the mouth of the "Institute" most of which bear a curious resemblance to the doctrine formerly used to advertise his dental preparations! In another version of the leaflet appears another explanation for the added ingredients in Cabasil: ". . . we found that it was necessary to supply the contiguous tissue juices with a new source of sulfur in the sulfhydral molecule" (Does this refer to the proprietary antiseptic preparation Sulfhydral or the sulfhydryl (SH) radical?); "Innumerable nutrient materials were tried and finally we found that a partially digested hexose, which we have called 'Lacosin,' answered this

1. Council on Dental Therapeutics: R. C. F. "F" Powder, "C" Solution, "R" Solution, Obtundent and Solvent—Not Acceptable for A. D. R., J. A. D. A. **22:** 850-854 (May) 1935.
2. Kabnick, Stuart: Should Deciduous Teeth with Nonvital Pulps Be Treated? Internat. J. Orthodontia & Dentistry for Children **19:** 1043 (Oct.) 1933.
3. Kabnick, Stuart: The Chemical Treatment of Several of the Diseases of the Oral Tissues, with Special Emphasis on Teeth with Nonvital Pulps, Internat. J. Orthodontia & Dentistry for Children **20:** 1190-1209 (Dec.) 1934.

requirement." Evidently a search is still going on for a suitable name of this constituent of Cabasil. It is to be hoped that the promised explanation of the "Kabnicyte" giant cell will be more illuminative than that given for the ingredient "Lacosin" or "Lactogin," particularly since not one of these coined terms is to be found in either chemical or medical dictionaries. The last quoted version of the leaflet also contained the following statements: "Today we have a complexity of compounds—'CaBaSil'—which has been studied clinically in some 80 hospitals in the United States. We exhibited this work to the National Health Institute in Washington, from where it was referred by the Director of that fine institution to the Army and Navy. The splendid results that some 200 physicians have obtained with our method of tissue disinfection with cell stimulation warrants a greater velocity of diffusion than we have obtained through the usual unsympathetic commercial channels." That Dr. Kabnick needs sympathy can hardly be questioned. There are no published reports to substantiate any of the claims made for Cabasil and not one of the agencies mentioned has endorsed its use!

A two page outline of the forms and indications of Cabasil lists over thirty unrelated conditions, including such diseases as allergy, arthritis, Buerger's disease, colds, colitis, chancroid, dysentery, gangrene, gastroenteritis, osteomyelitis, pneumonia and trichinosis. A mimeographed circular on the critical comparison of Cabasil with sulfonamide drugs and penicillin is no less expansive: it consists of a valueless tabulation of the comparative bacteriology, toxicity, hydrogen ion concentration, stability, sterility, formulas, administration, function and present status of these compounds. For example after "Formulae": Sulfa Drugs are credited with "Hundreds of different formulae"; Penicillin with "No definite formula. Five empirical formulae accepted"; Cabasil with "One definite formula." Throughout the circular the data listed under Cabasil are sprinkled with such parenthesized references as (Johnson), (Schmidt), (Calahan), (Daly), (Goldberg) and (Steel), to mention a few. Apparently these represent the names of physicians that have used the product in one form or another and may have supplied the promoter with testimonials of their experience. One such report signed by a physician with a surname corresponding to the last mentioned name was made available to the Council. It consisted merely in a list of 7 patients treated for various lesions with different forms of Cabasil, concluded by a favorable opinion of its merit as a stimulating local dressing for old wounds. Such uncontrolled evidence, even if it were published, could hardly be expected to support the expansive claims made for Cabasil! An abbreviated version of the circular on "Critical Comparison—" without reference to names has also been distributed; it is not clear which version is now extant, though it is considered not unlikely that a new one may be "in press" at the "Institute."

The untitled mimeographed leaflet on the so-called advantages of the use of the Cabasil technic consists of a list of amazing claims for the efficacy and economy of "implants" and "powder" in the treatment of the soldier with infected battle wounds, including osteomyelitis and gangrene, without the use of instrumentation or surgery. In one version of the leaflet it is stated that "one Cabasil plant into his bullet wound or wounds immediately after he is wounded, he will require little or no further attention." "The bleeding will be stayed and there will be little or no infection. Most bullet wounds heal with one plant." "Cabasil Powder will cure Trench Mouth (Vincent's Angina). The Powder can be supplied to all burns, abrasions or ulcers. . . ." (another version mentions that "one soldier equipped with a Cabasil Powder Blower could disinfect the mouths and nasal passages of the men of his entire company in twenty minutes, both mornings and evenings"); "A No. 1 capsule in the morning and one at night it will be possible to prevent any infestation from polluted water." "The Cabasil Concentrate Fluid can be used in the same concentration for treating necrotic and gangrenous tissues and large septic ulcers or bed sores." The other version states that "with Cabasil we can prevent 95 per cent of the simple wounds from becoming infected. We can prevent most amputations." Such claims were among those considered by an outstanding group of scientists during the war. Dr. Kabnick's claims for this proprietary remedy in wounded soldiers are so fantastic as to indicate a complete ignorance of war wound and combat conditions. Since the armed forces did not endorse the use of Cabasil during the war, it is assumed that this form of advertising may have been discarded in favor of more timely methods of promotion.

The Council on Pharmacy and Chemistry believes it unnecessary to add arguments to refute even the small portion of the quoted statements of Dr. Kabnick, the "Institute" and from other advertising for Cabasil. The claims speak for themselves! In view of this it is hard to imagine that any well trained practicing physician or surgeon could be persuaded to use Cabasil in any of the variety of forms of variable and obscure composition with which it is marketed, particularly when such weird and unscientific claims are based solely on the twelve year old published observations of one who would tell others how to practice medicine although he himself does not have the right and experience to engage in the practice of medicine.

Since Dr. Kabnick has previously promoted a variety of dental products under the name R. C. F. and has subsequently been engaged (directly or indirectly) in promoting a similar variety of products for medical use under the name Cabasil, the Council warns against the possibility that the promoter may again proceed along another tangent by adoption of another name and set of conditions on which to base criteria for his so-called "ideal" disinfectant. The Council condemns the manner in which Cabasil has been exploited to the medical profession and public and offers this statement for the information of all concerned.

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

AUSTIN SMITH, M.D., *Secretary.*

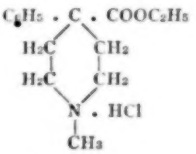
EPHEDRINE SULFATE (See New and Nonofficial Remedies, 1945, p. 285).

The following dosage form has been accepted:

WILLIAM H. ROBER, INC., PHILADELPHIA

Solution Ephedrine Sulfate: 50 mg. in 1 cc. ampuls.

DEMEROL HYDROCHLORIDE.—Meperidine hydrochloride. — Isonipecaine. — Ethyl-1-methyl-4-phenylpiperidine-4-carboxylate hydrochloride.—M. W. 283.79.



The base ethylmethylphenylpiperidine carboxylate may be obtained by combining dichlorodiethylmethylamine with benzylcyanide and subsequent esterification; this is converted to the hydrochloride.

Actions and Uses.—Demerol hydrochloride possesses a minor atropine effect and predominant morphine-like analgesic properties. It is capable of depressing the cardiac vagus of the anesthetized animal to the point where faradic stimulation fails to elicit any cardiac effect. Such responses are reversible.

The spasmolytic action of Demerol hydrochloride is due in part to depression of the parasympathetic endings but is primarily the result of a direct papaverine-like depression of the muscle fiber.

Therapeutic doses produce a slight sedative and a decided analgesic action. Unlike morphine, Demerol hydrochloride is not a potent hypnotic. In man the analgesic effect of Demerol hydrochloride appears to lie between that of morphine and codeine and persists for from five to six hours.

Although it has not been possible to demonstrate the development of physiologic dependence to Demerol in animals, the drug does possess a moderate degree of addiction liability. The

development of tolerance to the drug has been demonstrated in man, and it has been shown that Demerol may be substituted for morphine in addicted individuals with prevention of the morphine withdrawal syndrome. Furthermore, mild withdrawal symptoms have been observed in susceptible individuals purposely addicted to the drug.

The possibility of development of psychic dependence to Demerol must also be kept in mind, since the drug will produce a euphoria in some individuals which lasts for an hour or more, depending on the dose.

Demerol hydrochloride is indicated for the alleviation of pain, particularly pain of spastic origin, and in the majority of conditions in which morphine or other opium alkaloids are generally employed. In obstetrics it may be used to lessen the severity of labor pains and, in conjunction with barbiturates, to produce obstetric amnesia.

Dosage.—For most medical and surgical conditions the average adult dose of Demerol hydrochloride is 0.1 Gm., administered either intramuscularly or orally. In some patients pain is controlled by as little as 50 mg. Others suffering from severe pain require 0.15 Gm. For the production of analgesia in obstetrics, 0.1 Gm. is given intramuscularly as soon as contractions occur at regular intervals. If labor is rapid or if the cervix is thin and dilated (2 to 3 cm. or more) the second dose may be given as soon as one-half hour after the first one. A third dose may be necessary an hour or two later, depending on progress.

If the production of amnesia is desired, one of the barbiturates may be given when the cervix is dilated 4 or 5 cm. or when the third dose of Demerol hydrochloride is administered. In the majority of cases this procedure will insure adequate amnesia for from four to six hours. When barbiturates are used with Demerol hydrochloride for this purpose they are effective in considerably smaller doses than when used alone.

Tests and Standards.—

Demerol hydrochloride occurs as a fine, white crystalline, odorless powder; stable in the air at ordinary temperature; soluble in water, acetone and ethyl acetate; slightly soluble in ethanol and isopropanol; insoluble in benzene and ether. Its aqueous solution (1 in 10) is acid to litmus. Demerol hydrochloride melts at 186 to 189 C. Aqueous alkali carbonates and hydroxides precipitate the free base as a water white to a pale yellowish solid.

Dissolve about 0.1 Gm. of demerol hydrochloride in 5 cc. of water, add 1 cc. of nitric acid followed by 1 cc. of silver nitrate solution: a white precipitate of silver chloride results, soluble in an excess of ammonia water.

To a solution of 0.100 Gm. of demerol hydrochloride in 5 cc. of ethanol, add 10 cc. of a 3 per cent alcoholic solution of picric acid, with constant stirring; let stand for two hours at room temperature and filter, collecting the demerol picrate formed, which melts at 190 to 191 C. Dissolve about 0.1 Gm. of demerol hydrochloride in 1 cc. of water and 1 cc. of U. S. P. alcohol; add 1 cc. of sulfuric acid: the solution is colorless *(readily carbonizable substances)*. Saturate about 0.1 Gm. of demerol hydrochloride dissolved in 10 cc. of water with hydrogen sulfide: no coloration or precipitation results *(salts of heavy metals)*.

Dry about 0.5 Gm. of demerol hydrochloride, accurately weighed at 100 C., for six hours: the loss in weight does not exceed 1 per cent. Incinerate about 0.5 Gm. of demerol hydrochloride, accurately weighed: the residue is not more than 0.1 per cent. Transfer about 0.3 Gm. of demerol hydrochloride, accurately weighed, to a 500 cc. digestion flask and determine the nitrogen content according to the official method described in Official and Tentative Methods of Analysis of the Association of Agricultural Chemists, fifth edition, page 26, chapter 2, paragraph 22: the percentage of nitrogen corresponds to not less than 4.8 per cent nor more than 5 per cent, when calculated to the dried substance.

Transfer about 0.3 Gm. of demerol hydrochloride, accurately weighed, to a suitable separatory funnel, add 25 cc. of water, followed by the addition of 5 cc. of sodium hydroxide solution; extract with five successive portions of ether, using 25 cc., 20 cc., 20 cc., 15 cc. and 10 cc. respectively; wash the combined ethereal solution with 10 cc. of water, filter through a pledget of cotton and evaporate to a thick oil in a stream of warm air. Reserve the aqueous extract for the chloride determination. Dissolve the oily residue in about 10 cc. of previously neutralized alcohol, warm slightly; add 10 cc. of tenth-normal hydrochloric acid solution, followed by the addition of an equal volume of water; determine the excess acid by titration with fiftieth-normal sodium hydroxide solution, using methyl red as an indicator: the amount of tenth-normal hydrochloric acid consumed corresponds to not less than 83.5 per cent nor more than 87.5 per cent of ethylmethylphenylpiperidine carboxylate when calculated to the dried substance. Transfer the alkaline aqueous portion from the immiscible solvent extraction to a 400 cc. beaker and place on the steam bath to remove the ether, add 100 cc. of water, followed by the addition of 10 cc. of nitric acid and 25 cc. of silver nitrate solution, subsequently boil, with continous stirring, and allow to cool in a dark place. Collect the precipitate of silver chloride on a Gooch crucible, wash with diluted nitric acid and water, followed by alcohol and ether; finally dry to constant weight at 105 C.: the amount of hydrogen chloride calculated from the silver chloride found corresponds to not less than 12.8 per cent nor more than 13.2 per cent, when calculated to the dried substance.

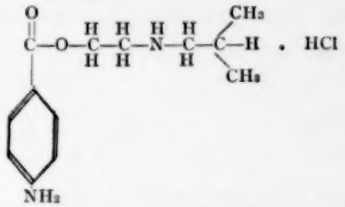
WINTHROP CHEMICAL CO., INC., NEW YORK

Solution Demerol Hydrochloride, 50 mg. per cc.: 2 cc. ampuls.

Tablets Demerol Hydrochloride: 50 mg.

U. S. patent 2,167,351, (July 25, 1939; Expires 1956). U. S. trademark 281,130.

MONOCAINE HYDROCHLORIDE.—2-Isobutylaminoethyl *p*-aminobenzoate hydrochloride.—*2-p*-Aminobenzoxy-N-isobutyl-ethylamine hydrochloride.—The hydrochloride of the ester formed from p-aminobenzoic acid and N-isobutyl ethanolamine.—$C_{13}H_{21}ClN_2O_2$.—M. W. 272.78.



Actions and Uses.—Monocaine hydrochloride is a local anesthetic similar to procaine hydrochloride. It is used for nerve block anesthesia in dentistry or other surgical operations. Present evidence does not warrant recommendation for its use for topical or surface anesthesia of mucous or other membranes. Its effects, either with or without the addition of epinephrine hydrochloride, are qualitatively identical in every respect with those of procaine. Quantitatively, monocaine has been shown to have about one-third more anesthetic and toxic potency than procaine (i. e., monocaine solutions of three-fourths the concentration of procaine solutions are approximately equivalent).

Dosage.—For dental or other minor surgery, a 1 per cent solution with epinephrine 1:75,000 may be injected to obtain nerve block anesthesia. In major surgery or other procedures requiring nerve block anesthesia equivalent to that produced by 2 per cent procaine, a 1.5 per cent solution of monocaine with epinephrine 1:100,000 may be used. (See caution under the general article Local Anesthetics.)

Tests and Standards.—

Monocaine hydrochloride occurs as a white, odorless, crystalline powder possessing a bitter taste and anesthetizing effects. It melts within the range 192-196 C. It is sparingly soluble in water, slightly soluble in alcohol and chloroform, very slightly soluble in benzene and practically insoluble in ether. The *p*H of a 1 per cent aqueous solution is about 4.7.

Dissolve 0.1 Gm. of monocaine hydrochloride in 50 cc. of water. Add 1 cc. of silver nitrate solution to a 5 cc. portion of the solution: a white precipitate forms, which is soluble in ammonia water. To another 5 cc. portion of the solution add 0.5 cc. of diluted hydrochloric acid and 0.5 cc. of 10 per cent sodium nitrite solution, followed by 10 cc. of ammonia water containing 0.2 Gm. of beta-naphthol: an orange precipitate forms which is ether soluble. Add 1 cc. of potassium mercuric iodide solution to 2 cc. of the monocaine hydrochloride solution: a white precipitate forms.

Dissolve 0.1 Gm. of monocaine hydrochloride in 5 cc. of water. Add two drops of sulfuric acid and 1 cc. of a saturated solution of sodium nitrite; heat to 50 C.: a yellow emulsion forms. Continue heating; an orange-red solution results, and reddish oil droplets form on the bottom of the tube and in the froth.

Weigh accurately about 0.5 Gm. of monocaine hydrochloride. Dry at 110 C. to constant weight: the loss in weight is less than 0.5 per cent. Ash the dried sample: the weight of the residue is not more than 0.25 per cent.

Dissolve about 0.25 Gm. of monocaine hydrochloride, accurately weighed, in 100 cc. of water; add 1 cc. of nitric acid and 20 cc. of silver nitrate solution; digest, filter, wash, dry at 110 C. and weigh the precipitate: the chloride content is not less than 12.8 per cent nor more than 13.2 per cent.

Transfer about 0.15 Gm. of monocaine hydrochloride, accurately weighed to a separator and proceed according to the method described for procaine hydrochloride in the book "Methods of Analysis of the Association of Official Agricultural Chemists," fifth edition, 1940, p. 590, Method II. Each cubic centimeter of tenth-normal hydrochloric acid is equivalent to 0.02728 Gm. of monocaine hydrochloride: the monocaine hydrochloride content is not less than 95 per cent nor more than 105 per cent.

NOVOCOL CHEMICAL MFG. CO., INC., BROOKLYN

Monocaine Hydrochloride Solution 1% with Epinephrine 1:75,000: 1 cc., 2 cc., 3 cc. and 5 cc. ampuls; 1 cc., 2 cc., 2.5 cc. and 5 cc. Anestubes (syringe cartridge); 2½ cc. and 5 cc. Novampuls (ampul type syringe); and 30 cc., 60 cc. and 120 cc. bottles. Each cubic centimeter contains monocaine hydrochloride 10 mg., epinephrine U. S. P. 0.013 mg., sodium bisulfite 2.0 mg. and sodium chloride 6.5 mg. in sterile distilled water.

Monocaine Hydrochloride Solution 1½% with Epinephrine 1:100,000: 1 cc., 2 cc., 3 cc. and 5 cc. ampuls; 1 cc., 2 cc., 2½ cc. and 5 cc. Anestubes (syringe cartridge); 2½ cc. and 5 cc. Novampuls (ampul type syringe); and 30 cc., 60 cc. and 120 cc. bottles. Each cubic centimeter contains monocaine hydrochloride 15 mg., epinephrine U. S. P. 0.01 mg., sodium bisulfite 2.0 mg. and sodium chloride 4.5 mg. in sterile distilled water.

U. S. patent 2,139,818 (Dec. 13, 1938; expires 1955).
U. S. trademark 353,653.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 North Dearborn Street - - Chicago 10, Ill.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - Eight dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, SEPTEMBER 21, 1946

THE HOSPITAL SURVEY AND CONSTRUCTION ACT

President Truman on August 13 gave his approval to the Hill-Burton hospital construction bill, officially designated as the Hospital Survey and Construction Act. With that approval this legislation became Public Law No. 725, 79th Congress. While the new law authorizes an appropriation of $3,000,000 for state conducted surveys of need and $75,000,000 annually for a five year period for construction of hospitals and related facilities, the recent Congress made available only $2,350,000, earmarked for assistance to states in surveying and planning and for administrative expenses of the United States Public Health Service in connection with the program.

The formation of a Division of Hospital Facilities has been announced by the Public Health Service, to be headed by Medical Director Vane M. Hoge. This new division of the Bureau of State Services will be responsible for carrying out the functions which the Public Health Service is authorized to perform under the law, including assistance to the states, their political subdivisions and nonprofit organizations in matters relating to the study, construction and operation of hospitals. This division will also assist the Surgeon General in preparing regulations, determining allotments and grants and considering applications, plans and projects.

Each state for which a state application for assistance in making a survey and in formulating a building program has been approved will be entitled to an allotment of such proportion of the available federal appropriation for such purposes as its population bears to the population of all the states. Within such allotment it will be entitled to receive 33⅓ per cent of its expenditures for surveys and planning. An allotment to any state will not be less than $10,000. Applications for survey and planning funds must be submitted on forms prepared for this purpose by the United States Public Health Service. The governors of the several states will be notified by the district offices of the Public Health Service as soon as these forms are available. In submitting an application a state must designate a single state agency to carry out the survey and planning, and there must be appointed a properly qualified advisory council to consult with the state agency, composed of representatives of nongovernmental organizations or groups and of state agencies concerned with the operation, construction or utilization of hospitals, including representatives of the consumers of hospital services selected from among persons familiar with the need for such services in urban and rural areas.

As previously indicated, the recently adjourned Congress did not appropriate funds for the construction of facilities. No doubt the next Congress will provide the necessary funds. When a state has completed the first step contemplated by the new law, namely a survey of the needs, a building plan must then be developed based on the results of the survey and study. This plan must be submitted to the Surgeon General for approval, following which the state will be eligible to receive construction allotments. These allotments will vary in amount. Population will be one factor, and in addition the average per capita income will be used in the allotment formula in such a way that states with a lower per capita income will receive proportionately larger allotments per capita.

Following the approval of the state plan, applications for funds for individual construction projects must be channeled through the designated state agency and by it submitted to the Surgeon General. Before any single project is approved, sufficient evidence must accompany the request to show that two thirds of the total cost of construction is available from other than federal sources and that financial support is adequate for the maintenance and operation of the hospital or related facility at completion. As in the case of the survey and planning, then, the federal amount available to aid in a construction project will be one third of its cost. If a construction application is disapproved by the Surgeon General, the state agency may appeal to the federal courts. No such appeal is available to the construction applicant, such as a municipality, for example.

A recent release by the Public Health Service indicated that, when an application for a building project has been approved, the allotment available to the state will be encumbered to the full extent of the federal grant approved for that project even though the grant is paid in instalments. Sums allotted to a state for a fiscal year for construction and remaining unobligated at the end of such year will remain available to the state, but only for use during the following fiscal year.

In anticipation of the enactment of this law, many states either have already completed surveys or have made preparations to initiate them. Since this program is so intimately associated with the supplying of medical care, the medical profession cannot neglect its responsi-

bility to make certain that its development and administration proceed along rational lines. State administrative agencies and advisory councils should be wisely selected, and state and local medical associations should extend their counsel to those to whom the duty of carrying out the provisions of the law has been or will be entrusted.

EUGENICS AND PHENYLKETONURIA

Penrose,[1] in a lecture delivered at University College in the University of London, emphasized the fact that the biologic units of inheritance are genes and not the visible characters. In the case of a rare recessive character the correspondence between presence of the gene and presence of the character is weak. The offending genes are maintained in the population almost entirely by the transmission through normal heterozygotes or carriers. These people carry the gene, but its presence is not manifest.

Penrose has chosen phenylketonuria as a practical example of a eugenic problem and its relation to natural selection. Phenylketonuria is a rare disease, first observed in 1934 by the Norwegian biochemist Fölling. The essential feature is the urinary excretion of about 1 Gm. daily of phenyl pyruvic acid, a ketonic acid with the formula $C_6H_5.CH_2.CO.COOH$. The excretion is usually continuous throughout life and has been observed in infancy. Every patient so far examined has shown intellectual defect. This is commonly of a severe degree, amounting to imbecility or idiocy. Penrose prefers the name "phenylketonuria" to the original "imbecillitas phenylpyruvica" or to the "phenylpyruvic oligophrenia" of American workers. The test for phenylpyruvic acid in the urine consists in adding to the urine a few drops of 5 per cent ferric chloride solution. When the acid is present a deep bluish green, which fades within a few minutes, is obtained. Cases of phenylketonuria were observed in Great Britain, France, the United States, Switzerland and Canada. Among the main distinctive physical features are dwarfing of stature and reduced head measurements as compared with the normal average. Fair hair and blue eyes are common characteristics. The quantity of the acid excreted depends on the diet. It can be increased by feeding either levophenylalanine or dextrophenylalanine and temporarily abolished by a protein free diet. It is probable that phenylalanine, although a common and necessary constituent of ordinary diet, is the source of the abnormal metabolite.

Penrose states that the parents were all normal in the fifty-six families of which he has records; 39 brothers or sisters of those affected were also subjects of the condition and 153 were normal. Five pairs (9 per cent) of the parents were first cousins. Jervis found that 5 per cent of the parents of the patients from the United States institutions were first cousins, and 14 per cent of the parents of the Norwegian patients were first cousins. The frequency of the condition in the general population was estimated by Munro in 1939 to be about 1 in 50,000 in the United Kingdom and by Jervis in 1937 to be about 1 in 25,000 in the United States. In Norway the incidence may be somewhat greater.

The practical medical aim is to reduce the incidence of phenylketonuria. This can be accomplished by preventing consanguineous matings in affected families and ultimately by preventing all matings of two carriers. The problem of phenylketonuria is interesting because it offers an instance of a detectable chemical deviation associated with abnormal mental function. This discovery raises two important questions: (1) whether some other types of mental illness will not be found to have hereditary biochemical backgrounds and (2) how far the course of such illnesses, when identified, can be influenced by the deliberate alteration of body metabolism.

1. Penrose, L. S.: Phenylketonuria: A Problem in Eugenics, Lancet **2**: 949 (June 29) 1946.

RENAL PATHOLOGY IN THE LIGHT OF RECENT NEUROVASCULAR STUDIES

Trueta[1] recently suggested that renal anoxia found in a number of pathologic conditions was probably the result of stimulation of the vascular nerves rather than the result of failure of the peripheral circulation. Trueta and his colleagues,[2] working at the Nuffield Institute for Medical Research, Oxford, report a number of interesting experiments to test the correctness of this hypothesis. They obtained a radiographic demonstration in the intact animal that the left renal circuit time was shortened by half as a result of the application of a tourniquet for a number of hours to the left hind limb, although the caliber of the renal artery was at the same time reduced by one fourth. Their explanation of this phenomenon is that a vascular short circuiting has taken place. Further evidence of such short circuiting was obtained in laparotomized animals after various types of nerve stimulation. Dyes injected into the arterial side of the circulation appeared in the renal vein but did not stain the surface of the kidney. On section the cortex was seen to be unstained, while the medulla and especially its subcortical part were deeply colored.

The here reported observations indicate that the blood may be diverted wholly or partly from the cortex as a result of nerve stimulation and short circuited through medullary blood channels. The large potential capacity of these by-passing channels enables them to transmit the whole of the renal blood inflow whenever the supply to the cortex is diverted and the latter is thereby rendered ischemic. These experiments demonstrate that renal circulation can be continued through

1. Trueta, J.: Renal Anoxia, Letters to the Editor, Lancet **2**: 415 (Sept. 29) 1945.
2. Trueta, J.; Daniel, P.; Barclay, A. E.; Franklin, K. J., and Prichard, M. M. L.: Renal Pathology in the Light of Recent Neurovascular Studies, Lancet **2**: 237 (Aug. 17) 1946.

the medulla while the cortex is functionally ischemic in the experimental animal. The flow of urine in the ureter under these conditions decreases or is entirely suppressed.

The authors advance the concept that the functional change over to a medullary renal circulation is a protective mechanism. Conceivably nerve stimulation could be produced centrally or peripherally by a variety of noxious agents, giving rise to such syndromes as "sulfa kidney," incompatible-transfusion kidney and some forms of nephritis. In the light of this concept our interpretation of renal function tests would have to be reconsidered, while at the same time the pathology of hysterical uremia, emotional anuria and posttraumatic uremia, and the response of these last two to splanchnic block, are readily explained. The authors likewise suggest that hypertension may be the result of disordered activity of some nerve center or centers from which the impulses are sent to the same vascular effector organs as are involved in the cortical ischemia and medullary congestion described by them. They hope to publish a full account of this work in the near future in book form.

Current Comment

RECENT POPULATION CHANGES

The war, at least temporarily, has exerted a profound influence on the population of many countries. In the United States,[1] for example, the birth rate increased rapidly just before and during the early part of the war. This was followed by a comparative decline. Also during the war there was a tremendous shift of population from rural to urban areas. This is considered to be largely irreversible because of the generally lowered fertility in urban groups. Consequently this shift in population may eventually lower the future birth rate because of the constant differential between urban and rural families in this respect. While extensive population changes were occurring in this country, alterations of other kinds were occurring elsewhere. For example, a study [2] of the effects of famine on the population of Greece has revealed that famine has exerted a profound effect on the population. The acute manifestations of famine lasted for two years, from May 1941 to April 1943. During this period the losses in Athens and Piraeus due both to excess mortality and to reduced births exceeded 60,000 persons. In fact, it has been estimated that all of Greece lost about 450,000 human beings as a result of the acute privations resulting from lack of food during the early months of the German occupation. As would be expected also, malnutrition affected the physique of children adversely, and this in turn may eventually influence the population pattern in that country further.

1. Taeuber, Conrad: Wartime Population Changes in the United States, Milbank Mem. Fund Quarterly **24**: 235 (July) 1946.
2. Valaoras, V. G.: Some Effects of Famine on the Population of Greece, Milbank Mem. Fund Quarterly **24**: 215 (July) 1946.

BLOOD TRANSFUSION AND MALARIA

The hazard of inoculating patients with malaria during blood transfusions has been increased considerably by the return of large numbers of military and civilian personnel from malarious areas. A committee was formed at the Mayo Clinic to examine certain aspects of this problem and recently has reported its recommendations.[1] Although patients acquiring malaria by inoculation respond readily to treatment and generally do not have relapses, the committee points out that there is no justification for risking inoculation by failure to take suitable precautions. The following general rules are recommended by the committee, both for use of blood for immediate transfusion and for donation to blood banks: "1. If the prospective donor has been in a malarious area and has had an attack of malaria, he should not be used as a donor for at least two years after leaving the zone, provided that he discontinued suppressive treatment (atabrine or quinine) then and has not had any recurrences of malaria for at least two years previous to his donation. Before donation a thick smear should be examined and found to be negative. 2. If the prospective donor was in a malarious area and has not had an attack of malaria and for the past year has not taken any suppressive treatment, he may be used provided a thick smear does not reveal any parasites. The history of undiagnosed fever or a questionable history should cause the application of rule 1." An occasional transfer of malaria may occur even with these rules. Therefore physicians should be watchful especially if a patient develops chills and fever about a week after receiving blood from a person who has been in an overseas malarious area. In choosing donors it should be remembered that not only military personnel have been exposed but also Red Cross workers, U. S. O. entertainers, civilian specialists, government officials, newspaper correspondents and Merchant Marine personnel.

1 Maytum, C. K., and others: Malaria, Proc. Staff Meet., Mayo Clin. **21**: 269 (July 10) 1946.

A NEW PERIODICAL ON "PLASTIC AND RECONSTRUCTIVE SURGERY"

The appearance of the first number of *Plastic and Reconstructive Surgery*,[1] the first periodical publication to be devoted exclusively to these specialized fields, is an important landmark in the rapid progress made by this specialty in the course of the last few decades. The American Society of Plastic and Reconstructive Surgery was organized in 1941; it has an active membership of 100 specialized honorary and corresponding members. The American Board of Plastic Surgery was formed in June 1937. The final step in the development of plastic surgery as a specialty was taken in May 1941, when the Advisory Board for Medical Specialties of the American Medical Association gave the Board of Plastic Surgery the status of a major board. There are at present 160 specialists certified by the board, many of whom were in the armed forces.

1. Plastic and Reconstructive Surgery, Journal of the American Society of Plastic and Reconstructive Surgery, Inc., Warren B. Davis, editor, 135 South 18th Street, Philadelphia 3, vol. 1, July 1946.

The first issue of the new periodical contains a foreword by Vilray P. Blair, an extensive article by Gustave Aufricht on the development of plastic surgery in the United States, an article by John Staige Davis on the present evaluation of the merits of the Z-plastic operation and a number of other valuable articles. The publication will be bimonthly, totaling one volume of at least 500 pages a year. An international abstract of the current literature of plastic surgery will appear in each issue of the journal. A number of experienced plastic surgeons have been selected to present brief synopses of all articles dealing with plastic and reconstructive surgery published in other journals.

PENICILLIN VS. BACTERIAL ENDOCARDITIS

In 1938 Friedman [1] studied the effects of gentian violet and merthiolate on Streptococcus viridans growing embedded in a fibrin clot. He found that the fibrin had a striking retarding effect on the bactericidal action of these germicides. Afterward it was shown [2] that there was a similar inability of sulfanilamide and sulfapyridine to penetrate a normal blood clot. These observations suggested a plausible explanation for the reported failure of sulfonamide compounds in the treatment of bacterial endocarditis and led to the suggestion that sulfonamide therapy of this disease should be supplemented with the administration of heparin or other anticoagulants so as to lessen the deposition of fibrin on the infected valves. Encouraging results are now reported by Nathanson and Liebold [3] of the University of Southern California, who have extended the previous fibrin penetration studies to include some of the recent antibiotics. Control agar plates were prepared, using Bacillus subtilis as the test organism. Fibrin plates were prepared using reconditioned dried fraction I human plasma mixed in a Petri dish with subtilis spores and afterward coagulated by the addition of bovine thrombin. Three penicillin assay cups were placed equidistantly on each agar and fibrin plate and filled with the substances to be tested. The plates were kept at room temperature, and measurements of the diameters of the zones of inhibition made at twenty-four hour intervals. Confirming the conclusions of earlier investigators, the California clinicians found that with twenty-fifth molar sulfathiazole or sulfadiazine on the agar plate the average zone of inhibition surrounding each cup increased to 18 mm. in diameter by the end of four days. There was no detectible zone of inhibition surrounding any one cup on the fibrin plate. Both these sulfonamide compounds thus diffuse readily through agar but are wholly nondiffusible through the fibrin clot. In contrast, 2 units of penicillin per cubic centimeter gave an average inhibition zone 16 mm. in diameter on agar plate and 14 mm. in diameter on the fibrin plate. Within the limits of experimental error, penicillin is thus equally diffusible through agar and fibrin clots. In their opinion the ready diffusibility of penicillin through fibrin clots is a theoretically important factor in the penicillin therapy of subacute bacterial endocarditis and renders the use of an anticoagulant superfluous.

1. Friedman, Meyer: J. Pharmacol. & Exper. Therap. **63**: 173, 1938. Use of Sulfanilamide and Sulfapyridine in Therapy of Subacute Bacterial Endocarditis, Arch. Int. Med. **67**: 921 (May) 1941.
2. Duncan, C. N., and Faulkman, J. M.: Am. J. M. Sc. **200**: 492, 1940.
3. Nathanson, M. H., and Liebhold, R. A.: Proc. Soc. Exper. Biol. & Med. **62**: 83 (May) 1946.

EARLY FAILURE OF BREAST FEEDING

During the past few years little information has been obtained on the fundamental causes for unsatisfactory human lactation, in spite of an apparent increase in the frequency of inability of mothers to carry out successful breast feeding. In a recent study of the causes and prevention of early failure of breast feeding, Waller [1] has pointed out the relative lack of statistics on the duration of breast feeding and on the detailed cause for failure. He quotes a British government publication which estimates that about 80 per cent of the babies leave the maternity hospital wholly breast fed, whereas 95 per cent of the babies born on the "district" are wholly breast fed when the midwife leaves. In a group of 436 primiparous women seen consecutively at an infant welfare center in East Liverpool, 28 per cent had ceased breast feeding by the end of one month, 38 per cent before two months, and 42 per cent before three months had elapsed. Of the 122 who failed the earliest, almost all said that their milk had "left them" when they got up from bed or within a few days thereafter. A detailed analysis indicated that an easy beginning of breast feeding depends on the milk pressure within the breast not rising to an excessive degree. If the milk pressure does rise too high and if it is not decreased speedily, a rapid decline in milk production follows because of alveolar distention and compression of the secreting cells. He claims that this is the chief reason back of the statement of many women that their milk fails soon after they get up from childbed. The frequency of high milk pressure at the beginning of the first lactation is attributed generally to certain anatomic defects of the nipples and the terminal ducts. Although there is good clinical evidence to support this claim, Waller believes that this theory needs confirmation by other and more exact means. He employed a controlled experiment to test the hypothesis. Half of the women under observation were taught the daily removal of colostrum during the last three months of pregnancy. The experience of these women in breast feeding was compared with another group, the number of which were not taught this procedure, the two groups being treated otherwise in an identical manner. Excessive milk pressure occurred in 25 per cent of the women who were taught the procedure and in 56 per cent of the controls. At the end of six months 83 per cent of the taught group were carrying out successful breast feeding, while only 42 per cent of the control group were likewise feeding their infants successfully from the breast. Since breast milk is still recognized as the ideal nutrient for newborn babies, any measure which will increase the percentage and satisfactory nature of breast feeding deserves careful study.

1. Waller, Harold: The Early Failure of Breast Feeding, Arch. Dis. Childhood **21**: 1 (March) 1946.

ORGANIZATION SECTION

Washington Letter

(From a Special Correspondent)

Sept. 16, 1946.

The President's Physician Promoted to Brigadier General

President Truman has elevated his personal physician, Col. Wallace Graham, to the rank of brigadier general. The promotion is subject to approval by the Senate when Congress reconvenes after the present recess. Graham is from Kansas City and has a distinguished war record. He will serve at the George Washington University School of Medicine as professorial lecturer in surgery.

George Washington Medical School Launches Postwar Program

Typical progressive changes in medical school curriculums now being effected are reported from the George Washington University School of Medicine. The faculty will have 27 new members, many of whom served in the Army and Navy during the war. Courses in cardiology, gastroenterology, pharmacology, chest surgery and anesthiology have been strengthened. Instruction in tropical diseases is also being improved as a result of wartime revelation of the effects of malaria, filariasis and dengue on white men. Public health is to be given greater emphasis and research is being intensified with projects under way on cancer, anesthesia, antibiotics, infectious diseases, spotted fever and nutrition. Dean Walter A. Bloedorn anticipates enlargement of facilities for medical teaching with the opening of the university's new 450 bed hospital next year.

Survey of Diarrhea Epidemic in Freedmen's Hospital

The twelfth death in the infantile diarrhea epidemic at Freedmen's Hospital has occurred after 28 babies were stricken with the malady, and federal officials have the situation under study. Watson B. Miller, Federal Security Agency administrator, who has jurisdiction over the hospital, Dr. Otis Anderson, U. S. Public Health Service special hospital division chief, and Budget Bureau experts have been conducting an extensive survey to find remedial measures. The hospital superintendent, Dr. James L. Hall, has outlined a program to buy $7,000 in new equipment, rearrange nurseries and other facilities at a cost of $10,000, add thirty nurses to the staff and reduce beds available for maternity cases from 52 to 35 and the number of bassinets from 54 to 42. The plan was mapped out in conferences with the Bureau of Maternal and Child Welfare, the Children's Bureau, and the U. S. P. H. S.

The President Visits General Pershing and Opens Fair for Nurses Memorial

President Truman visited Walter Reed Hospital this past week to wish "happy birthday greetings" to General Pershing, who was 86, to open a country fair staged to raise money for the Nurses National Memorial Home planned for downtown Washington, and to tour the hospital wards. He declared that "a wonderful job is being done in the rehabilitation of these wounded veterans" in all service and veterans' hospitals.

Annual Health Examinations of Federal Employees Advocated by U. S. P. H. S.

The U. S. Public Health Service has recommended to the Federal Council of Personnel Administration that there be annual health examinations for federal workers. This was suggested as part of a program for new medical units to be set up in government agencies to safeguard worker health. The Public Health Service also urged that the present physical examination for federal workers be retitled a "health examination" and be expanded to include dental examinations and tests for nervous diseases. It is suggested that the new medical units be staffed with one doctor for every 4,000 to 6,000 employees, with one nurse for the first 300 workers, three for the first thousand and one for each additional thousand up to 5,000, and one for every 2,000 workers above 5,000. This plan is based on the formula recommended for private concerns by the American Medical Association. The Federal Recreation Committee has also recommended closer cooperation with the Public Health Service in administering the new Randolph health act for federal workers.

National Arthritis Research Foundation Headed by Lionel Barrymore

Lionel Barrymore is board chairman of the National Arthritis Research Foundation, formed a year ago by officials of the Leo N. Levi Memorial Hospital, Hot Springs, Ark., the only nonsectarian hospital in the United States devoted to free care of arthritis patients, which has set a goal of $2,500,000 for research laboratories to be located at Hot Springs.

Coming Medical Meetings

Annual Congress on Industrial Health, Boston, Sept. 30-Oct. 2. Dr. Carl M. Peterson, 535 N. Dearborn St., Chicago 10, Secretary.

American Academy of Ophthalmology and Otolaryngology, Chicago, Oct. 13-18. Dr. W. L. Benedict, 102 Second Ave., Rochester, Minn., Secretary.

American Academy of Pediatrics, Pittsburgh, Nov. 13-16. Dr. Clifford G. Grulee, 636 Church St., Evanston, Ill., Secretary.

American Association of Railway Surgeons, Chicago, Oct. 29-31. Dr. Raymond B. Kepner, 547 West Jackson Blvd., Chicago 6, Secretary.

American Association on Mental Deficiency, Montreal, Canada, Oct. 2-4. Dr. Neil A. Dayton, Mansfield Depot, Connecticut, Secretary.

American Clinical and Climatological Association, Hershey, Pa., Oct. 21-23. Dr. James Bordley III, Johns Hopkins Hospital, Baltimore 5, Secretary.

American Hospital Association, Philadelphia, Sept. 30-Oct. 3. Mr. George P. Bugbee, 18 E. Division St., Chicago, Executive Secretary.

American Otorhinologic Society for the Advancement of Plastic and Reconstructive Surgery, New York, Nov. 14. Dr. Norman N. Smith, 291 Whitney Ave., New Haven 1, Conn., Secretary

American Public Health Association, Cleveland, Nov. 12-14. Dr. Reginald M. Atwater, 1790 Broadway, New York 19, Executive Secretary.

Association of American Medical Colleges, New Orleans, Oct. 28-30. Dr. Fred C. Zapffe, 5 South Wabash Ave., Chicago, Secretary.

Association of Military Surgeons of the United States, Detroit, Oct. 9-11. Col. James M. Phalen, Army Medical Museum, Washington 25, D. C., Secretary.

District of Columbia, Medical Society of the, Washington, Sept. 30-Oct. 2. Mr. Theodore Wiprud, 1718 M Street N. W., Washington 6, Secretary.

Indiana State Medical Association, Indianapolis, Oct. 29-31. Mr. Ray E. Smith, 23 East Ohio St., Indianapolis 4, Secretary.

International College of Surgeons, United States Chapter, Detroit, Oct. 21-23. Dr. Louis J. Gariepy, 16401 Grand River Ave., Detroit 27, Secretary.

Inter-State Postgraduate Medical Association of North America, Cleveland, Oct. 15-18. Dr. Tom B. Throckmorton, 406 Sixth Ave., Des Moines, Iowa, Secretary.

Kansas City Southwest Clinical Society, Kansas City, Mo., Oct. 7-10. Dr. A. Lloyd Stockwell, 630 Shukert Bldg., Kansas City 6, Secretary.

Kentucky State Medical Association, Paducah, Sept. 30-Oct. 3. Dr. P. E. Blackerby, 620 S. Third St., Louisville, Secretary.

Michigan State Medical Society, Detroit, Sept. 25-27. Dr. L. Fernald Foster, 2020 Olds Tower, Lansing 8, Secretary.

Mississippi Valley Medical Society, St. Louis, Sept. 25-27. Dr. Harold Swanberg, 510 Maine St., Quincy, Ill., Secretary.

Nevada State Medical Association, Las Vegas, Oct. 4-5. Dr. Moreton J. Thorpe, 17 N. Virginia St., Reno, Secretary.

North Pacific Pediatric Society, Vancouver, B. C., Oct. 19. Dr. A. B. Johnson, Cobb Bldg., Seattle 1, Secretary.

Omaha Mid-West Clinical Society, Omaha, Oct. 28-Nov. 1. Dr. Roy W. Fouts, 1036 Medical Arts Bldg., Omaha 2, Secretary.

Oregon State Medical Society, Gearhart, Sept. 26-28. Dr. Thomas S. Saunders, 1020 S.W. Taylor St., Portland 5, Secretary.

Pacific Association of Railway Surgeons, San Francisco, Oct. 18-19. Dr. W. T. Cummins, 1400 Fell St., San Francisco 17, Secretary.

Pennsylvania, Medical Society of the State of, Philadelphia, Oct. 7-10. Dr. Walter F. Donaldson, 500 Penn Ave., Pittsburgh 22, Secretary.

Southern Medical Association, Miami, Fla., Nov. 4-7. Mr. C. P. Loranz, Empire Bldg., Birmingham 3, Ala., Secretary.

Southern Psychiatric Association, Richmond, Va., Oct. 7-8. Dr. Newdigate M. Owensby, 384 Peachtree St. N.E., Atlanta, Ga., Secretary.

Vermont State Medical Society, Burlington, Oct. 2-4. Dr. Benjamin F. Cook, 128 Merchants Row, Rutland, Secretary.

Virginia, Medical Society of, Virginia Beach, Oct. 14-16. Miss Agnes V. Edwards, 1200 East Clay St., Richmond 19, Secretary.

Wisconsin, State Medical Society of, Milwaukee, Oct. 7-9. Mr. Charles H. Crownhart, 110 E. Main St., Madison 3, Secretary.

GOVERNMENT SERVICES

ARMY

FACULTY MEMBERS ATTEND MILITARY SCHOOL

Twenty-two faculty members from medical schools throughout the United States began a course of instruction September 3 at the Army Medical Department Schools, Brooke Army Medical Center, for an indoctrination course in the Reserve Officers Training Corps. The officers, on completion of the two weeks course, will instruct medical ROTC students at their schools. Brooke Army Medical Center is the world's largest complete military medical installation designed to train army personnel in all phases of medical services. The Medical Department Schools is one of seven major units of the center.

Among those attending the course of instruction are: Drs. William Knott, Boston University; Paul French, University of Vermont; Lawrence French, Cornell University; Richard Farr, Syracuse University; Charles B. Brown, University of Buffalo; Gordon Hall, Medical College of Virginia; J. Neill Garber, Indiana University; Kenneth Smith, Ohio State; Robert McMahon, Western Reserve University; Richard R. Crutcher, Vanderbilt University; Herbert Davenport, Baylor University; John Sheldon, University of Michigan; Elmer Pratt, State University of Iowa; Hilbert Mark, University of Minnesota; Roy V. Boedeker, St. Louis University; Richard Yor, Washington University; Alfred Briguilio, George Washington University, Washington, D. C.; Malcolm McKaig, Georgetown University; Dr. Cameron, University of Pittsburgh.

DIRECTOR OF NEUROPSYCHIATRY CONSULTANTS DIVISION

Col. John M. Caldwell, M. C., U. S. Army, has been appointed director of the neuropsychiatry division in the Surgeon General's Office to succeed Brig. Gen. William C. Menninger, who was separated from the service on June 27. Colonel Caldwell, a graduate of the University of Georgia, has been a student of psychiatry and internal medicine since 1929, when he won a fellowship for study at the Mayo Clinic, Rochester, Minn. He received an M.S. in medicine from the University of Minnesota in 1932 and the same year was commissioned a first lieutenant in the Medical Corps, United States Army. In addition to other assignments, he has served at the Gorgas Hospital, Panama Canal Zone, at St. Elizabeths Hospital, Washington, D. C., and as chief of the neuropsychiatry section at Walter Reed General Hospital. Colonel Caldwell returned to the United States from Tokyo, March 1 of this year, after serving also in New Guinea and the Philippine Islands with the 54th General Hospital. He has been accredited by the American Board of Psychiatry and Neurology.

MEDICAL DEPARTMENT'S 171ST BIRTHDAY

General of the Army Dwight D. Eisenhower paid homage to the Army Medical Department on its 171st anniverary on July 27 at the Army Medical Center, Washington, D. C., before an audience of more than 1,000 and in a coast to coast broadcast. The General said that "even when viewed only from the narrow standpoint of battle line efficiency, the Medical Department was an invaluable asset to our commanders of this war. In the recent European campaign 30,000 more wounded men were treated, healed and sent back to the front line than were numbered in the entire average strength of the Medical Department of that theater."

General Eisenhower praised the Medical Department for the "moral effect on our fighting men of a human, devoted, efficient Medical Corps. Unbounded appreciation and admiration were freely given by combat soldiers to their comrades of the Medical Department. These sentiments were best expressed by the unanimous insistence of our front line regiments that their medical detachments be awarded a battle badge equivalent in its implication to the one that decorated the combat infantry. Greater military accolade than this no department, no service, no unit could receive."

Major Gen. Norman T. Kirk, the Surgeon General, described the army doctor as the soldier's best friend and most intimate confidant. When war struck, General Kirk said, "the Army Medical Department suddenly became the family physician and the nurse for the majority of the youth of this nation. This responsibility was accepted without equivocation. We will continue to be not only physician but friend and confidant of all men in our charge—seeking not to minimize but to enlarge our responsibilities."

General Kirk said that the Medical Department is now entering a new age of such promise that overwhelms the imagination. He outlined briefly the accomplishments of military medicine since the Medical Department was organized in 1775 and stated that the Army Medical Department was now facing squarely into the future.

The observance at the Army Medical Center was one of many programs commemorating the Army Medical Department's birthday held throughout the country.

ARMY AWARDS AND COMMENDATIONS

Major Loyall D. Farragut

The Army Commendation Ribbon was recently awarded to Major Loyall D. Farragut, Post Surgeon at the Regional Hospital, Fort Belvoir, Virginia, "for meritorious service as post medical inspector, Fort Belvoir, Virginia, during the period from Sept. 5, 1944 to Jan. 1, 1946." The citation stated that "Major Farragut by his extremely conscientious attention, not only to his normal duties but to self-imposed tasks involving many hours of overtime work nightly during the winter of 1944-1945 and in November and December 1945, contributed substantially to the maintenance of a comparatively low venereal disease rate and to the prevention of outbreaks of incapacitating respiratory disease at Fort Belvoir." Dr. Farragut graduated from the Tulane University School of Medicine in 1928 and entered the service April 10, 1942.

Colonel Richard D. Mudd

The Legion of Merit was recently awarded to Col. Richard D. Mudd, Saginaw, Mich., who "as Surgeon, San Antonio Air Technical Service Command, during the period from April 1942 to January 1946," the citation explained, "revised hospital plans, designed infirmaries and established veterinary, sanitary and dental service to meet the requirements of a rapidly expanding organization. In maintaining a high standard of health throughout that command, Colonel Mudd performed services which reflect great credit on himself and the armed forces of the United States." Dr. Mudd graduated from Georgetown University School of Medicine in 1926 and entered the service April 19, 1941.

Captain Fred K. Allen

The Bronze Star was recently presented to Capt. Fred K. Allen, Salem, Ind., for meritorious achievement in connection with military operations in Luzon, Philippine Islands, during the period from Jan. 30 to June 20, 1945. The citation stated in part that "Captain Allen was dispensary officer and registrar of an amphibian medical company which hospitalized, evacuated and treated an unprecedented number of patients, far in excess of its designated capacity." Dr. Allen graduated from the University of Indiana School of Medicine, Indianapolis, 1941 and entered the service July 1, 1942.

NAVY

NAVY AWARDS AND COMMENDATIONS

Rear Admiral Winchell McK. Craig

The Legion of Merit was recently awarded to Dr. Winchell McK. Craig, the citation accompanying the award stating that "the President of the United States takes pleasure in presenting the award for exceptionally meritorious conduct in the performance of outstanding services to the government of the United States as medical officer specialist, consultant, operator and instructor in neurosurgery for the United States Navy throughout World War II. A brilliant officer and surgeon, Rear Admiral Craig made numerous inspection trips to both battle fronts to instruct area commanders in the establishment of centers to carry out immediate operative procedures of nerve wounds and, by his foresight and professional skill, was in large measure responsible for reducing after-effects to the patient and for the saving of many lives. In addition, he rendered invaluable service in the training of neurosurgeons in the Navy and in providing an adequate number of competent field teams for the various fleets, hospital ships and for the Fleet Marine Force. His extraordinary ability, tireless efforts and inspiring devotion to the exacting responsibilities of his highly specialized assignment reflect the highest credit on Rear Admiral Craig and the United States Naval Service." Dr. Craig graduated from Johns Hopkins University School of Medicine, Baltimore, in 1919 and entered the service Dec. 26, 1941.

Lieutenant Robert J. Mearin

Lieut. Robert J. Mearin, New York, was recently commended by Admiral H. K. Hewitt, U. S. Navy, who stated in the citation accompanying the award, "Your performance of duty as senior medical officer, Advanced Amphibious Training Base, Bizerte, Tunisia, from October 1944 to May 1945 is deemed worthy of special commendation. You displayed exceptional professional and administrative ability and energy in supervising medical activities at the Advanced Amphibious Training Base, Bizerte, Tunisia. The spirit of cooperation that existed between the forces afloat of the amphibious forces and the medical facilities ashore on the base are in a great part due to your understanding of the various problems concerned. During this period of time a serious outbreak of bubonic plague occurred in the French and Arab populations of Ferryville, Bizerte and Tunis. Your prompt analysis of the problems involved and the initiative which you displayed in instituting control measures completely protected the United States Navy personnel of the Advanced Amphibious Training Base, Bizerte and forces afloat attached thereto from this dread disease and not 1 case occurred among United States Navy personnel. In the activities incident to the decommissioning of the base your supervision of the medical problems involved has demonstrated outstanding administrative ability and has resulted in an efficient disestablishment of the medical activities. I commend you for your exceptional ability, sound judgment and outstanding devotion to duty, which reflect credit on yourself and the United States Naval Service. You are hereby accorded the privilege of wearing the commendation ribbon pursuant to the authority delegated by ALNAV 179-44. A copy of this letter will be forwarded to the Chief of Naval Personnel to be filed in your official record." Dr. Mearin graduated from Syracuse University College of Medicine in 1934 and entered the service Aug. 6, 1942.

Commander Milton Berger

Comdr. Milton Berger, New York, was recently authorized to wear the Commendation Ribbon "for excellent service in the line of his profession as medical officer on a United States transport from April to July 1945 during the assault and occupation of Okinawa Gunto." The citation stated that "Commander Berger, with outstanding professional skill and gallant initiative, capably supervised the prompt and effective treatment given to numerous survivors which were brought aboard his ship for treatment and evacuation. Through his leadership, skill and devotion to duty while subject to frequent enemy air attacks he contributed materially to the saving of many lives and proved to be an inspiration to all. His conduct gives evidence of his great value to the Naval Service." Dr. Berger graduated from Long Island College of Medicine, Brooklyn, in 1923 and entered the service in September 1942.

OPPORTUNITIES FOR FULL TIME AND PART TIME ACTIVE DUTY

The Bureau of Medicine Surgery, U. S. Navy, Washington, D. C., invites the attention of Reserve Medical and Dental Officers to the opportunity to perform full time active duty at one of the fifteen major naval air stations of the Naval Air Reserve Training Command at Dallas, Texas; New York; Minneapolis; Grosse Ile, Ill.; Atlanta, Ga.; Glenview, Ill.; Columbus, Ohio; Olathe, Kan.; Memphis, Tenn.; St. Louis; Livermore, Calif.; Los Alamitos, Calif.; Willow Grove, Pa.; Squantum, Mass., or New Orleans.

It is announced that additional Medical Reserve Officers are needed as flight surgeons for the various units which comprise the organized and volunteer reserve components of the inactive reserve. Medical and dental reserve officers interested in full time active duty as members of the station keeper's staff at one of the fifteen naval air stations mentioned should initiate letters to the Bureau of Naval Personnel via the chief of naval air reserve training with headquarters at the Naval Air Station, Glenview, Ill., listing the stations at which duty is desired. Personnel are desired in the ranks of commander and lieutenant commander in the Medical Corps and rank of lieutenant in the Dental Corps.

Medical Reserve officers, preferably flight surgeons, who desire part time active duty with either the Organized or Volunteer components of the Inactive Reserve at one of the fifteen air stations mentioned should apply directly to the commanding officer of the station at which the units are based. Naval Air Reserve training units are also based at the naval air stations at Anacostia, D. C.; Norfolk, Va.; San Diego, Calif.; Seattle, and Miami, Fla. With regard to the latter stations, interested personnel should get in touch with the commanding officer of the naval air reserve training unit directly rather than with the commanding officer of the station.

THE NAVY GRADUATE TRAINING PROGRAM

The Bureau of Medicine and Surgery, Navy Department, Washington, D. C., has reported on the progress made thus far in the management of the Postwar Graduate Training Program established for the professional advancement of members of the Medical Corps of the Navy and Naval Reserve.

The initial phases of the program have now been developed to a point whereby a considerable number of the most desirable and professionally acceptable graduate training courses available to the medical profession have been obtained for the training of active members of the Navy Medical Corps. By the first of October a total of eighty-seven Naval medical officers will be actively engaged in graduate training in civilian institutions, with thirty-five selectees yet to be assigned to courses commencing during the calendar year 1946.

The results thus far in the acquisition of places for the training of naval medical officers in civilian institutions have been most gratifying. However, it is proposed to extend this phase of the program until a total of two hundred such places are available for the assignment of naval medical officers to graduate specialty training.

During 1946 to date, eighteen medical officers have completed courses of instruction in civilian institutions and one hundred and sixty-three have received six months or more of instruction in various specialties in the naval hospitals. In connection with the latter type training a subsequent report submitted for publication will embrace the current and proposed features of the residency training program established in naval hospitals.

PUBLIC HEALTH SERVICE

ORGANIZATION FOR ADMINISTERING THE HILL-BURTON ACT

The Federal Security Agency, Washington, D. C., has just issued a release concerning the organization for administering the Hill-Burton bill. The release reads as follows:

Formation of a Federal Hospital Council and an advisory committee to assist Surgeon General Thomas Parran of the U. S. Public Health Service in the administration of the Hospital Survey and Construction Act was announced September 12 by Federal Security Administrator Watson B. Miller. The first meeting of these groups will be held September 17 and 18 in the U. S. Public Health Service Building, Washington, D. C.

The purpose of the meeting, Mr. Miller said, will be to formulate plans for administration of the recently enacted Hill-Burton Act, which embodied one important feature of the President's national health program. Mr. Miller characterized this act as "an epoch in the development of health legislation designed to meet serious and widespread needs," explaining that "for the first time we are embarked on a national policy of planning and constructing hospitals and health centers to meet the health needs of all the people. For the first time we are creating new institutes not on a sporadic unplanned basis but on the basis of a long range, carefully thought out program, integrated to the role that our hospitals and health centers must play in the future."

To carry out this objective Congress has authorized the appropriation of $3,000,000 for surveys and planning and $75,000,000 for five years annually for construction. Of these sums $2,350,000 for surveys and planning has been appropriated.

A state will be eligible to receive construction funds after it has developed a state plan for the construction of needed hospital facilities, based on a statewide survey of existing facilities and existing needs. The state plan will be developed cooperatively by representatives of the state and its local communities and the federal government based on general standards formulated by the Surgeon General, with the approval of the Federal Hospital Council and the Federal Security Administrator.

In accordance with the provisions of the act, the Federal Hospital Council is composed of the Surgeon General, who serves as chairman, ex officio, and eight members appointed by the Federal Security Administrator. Four members are outstanding in health and hospital fields, and four are representatives of the consumers of hospital services.

Those members representing the hospital and health fields are Dr. Albert W. Dent, president, Dillard University, New Orleans; Very Reverend Monsignor John J. Bingham, director, division of health, Catholic Charities, New York City; Mr. Graham Davis, director of hospitals, Kellogg Foundation, Battle Creek, Mich.; Dr. Robin C. Buerki, dean, Graduate School of Medicine, University of Pennsylvania, Philadelphia.

Council members representing the consumers of medical services include Dr. Michael M. Davis, Committee for the Nation's Health, New York; Hon. J. Melville Broughton, attorney at law, Raleigh, N. C.; Mrs. Evelyn Hicks, Radio Station WTNB, Birmingham, Ala.; Mr. Clinton S. Golden, United Steel Workers of America, Pittsburgh.

Mr. Miller pointed out that the Federal Hospital Council is unique in that the Hospital Survey and Construction Act vests it with certain administrative functions. These include the approval of general regulations under which the program will operate—an unusual responsibility for a council of this type.

Members of the Advisory Committee will serve as consultants to the Surgeon General and the Federal Hospital Council in the administration of the Hospital Survey and Construction Act. To obtain the benefit of as wide representation as possible on the Advisory Committee its membership will be extended as specific needs arise. With the approval of the Federal Security Administrator, Dr. Parran has issued invitations to serve on this committee to Dr. Claude Munger, superintendent, St. Luke's Hospital, New York; Dr. Arthur Bachmeyer, director, University of Chicago Clinics and Hospitals, Chicago; Henry Southmayd, director, Hospital Activities, Commonwealth Fund, New York; Dr. Victor Johnson, secretary, Council on Education and Hospitals, American Medical Association, Chicago; Everett Jones, vice president, Modern Hospital Publishing Company, Chicago; George Bugbee, executive director, American Hospital Association, Chicago; Dr. Anthony J. J. Rourke, director, Stanford University Hospitals, San Francisco; Arthur Will, Director of Charities, Los Angeles County, Los Angeles; Joseph W. Fichter, master, Ohio State Grange, Columbus, Ohio; Stanley A. Pressler, associate professor of accounting, Indiana University School of Business, Bloomington, Ind.; James R. Edmunds, architect, president, American Institute of Architects, Baltimore; Ranson E. Aldrich, American Farm Bureau Federation, Cleveland, Miss.; Nelson Cruikshank, director, social insurance activities, American Federation of Labor, Washington, D. C.; James A. Hamilton, hospital consultant, Yale University, New Haven, Conn.; Rev. A. N. Schwitalla, president, Catholic Hospital Association and editor, *Hospital Progress,* Milwaukee; Miss Erma Holtzhausen, director of nursing services, Vanderbilt University Hospital, Nashville, Tenn.; Mrs. Agnes Meyer, Washington, D. C.; Dr. Carl W. Waldron, dean, School of Dentistry, University of Minnesota, Minneapolis; Dr. Frank F. Tallman, commissioner of mental diseases, State of Ohio, State Office Building, Columbus, Ohio; Mr. Howard L. Russell, director, American Public Welfare Association, Chicago; Miss Elizabeth Christman, secretary-treasurer, National Women's Trade Union League of America, Washington, D. C.; Dr. Franklin S. Crockett, chairman, Committee on Rural Medical Service, American Medical Association, Lafayette, Ind.; Right Reverend Monsignor John O'Grady, secretary, National Conference of Catholic Charities, Washington, D. C.; Mr. David V. Addy, chairman, Child Welfare Committee, American Legion, Detroit.

In announcing the appointment of the Federal Council and Advisory Committee, Mr. Miller emphasized that this program is the direct result of widespread public demand for improved health and hospital facilities. Introduced in the Senate Jan. 10, 1945, under bipartisan sponsorship, the bill had the immediate support of the American, Catholic and Protestant Hospital Associations, major labor and farm groups, the American Medical Association, American Public Health Association and numerous other organizations and individuals of national importance. No other important health legislation in recent history has had such universal public support.

MISCELLANEOUS

SALE OF SURPLUS GOODS TO VETERANS

A two week "top priority" drive to sell current stocks of surplus goods set aside for veterans began on September 15. Whenever practicable, sale of set-aside items is restricted to one to a veteran. As a further step in widening distribution, lot sizes are being reduced. Veterans will be able to buy these goods at sales in every section of the country as well as through regional offices of the War Assets Administration.

The War Assets Administration cautioned veterans to remember, however, that set-aside items are in short supply and will not meet the demand of thousands of veterans who want them. Because some regions do not have certain set-aside items, new stocks will be allocated as far as possible to the various regions and suballoted to the states on the basis of veterans' population figures. The objective is wide and fair distribution among veterans.

Only veterans of World War II may buy set-aside items, which include, among other things, automotive equipment, office machines, appliances and furniture and certain general products. Medical and dental equipment for veterans will be allocated only by Washington. Allocations apply primarily to standard items in new condition.

It is expected that the special sales campaign will close out the set-aside operation except for addition of a few items in the future to benefit newly discharged veterans. Because of tremendous demand by veterans for certain items in short supply, further certification has been stopped on some items in order to forestall disappointment among veterans who might be certified only to find themselves unable to buy the item.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Alves, Walter J.....Guntersville
Barber, Homer D.....Fayette
Brister, Samuel L.....Tuscaloosa
Chapman, John R.....Goodwater
Coston, Ralls M.....South Birmingham
Erwin, James H.....Mobile
Finney, James O.....Gadsden
Fitzgerald, William J.....Mobile
Hardy, Julian P.....Newala
Jackson, Benjamin F., Jr....Montgomery
Lewis, Willis E.....Tuskegee
Manly, John B.....Tuskegee
Windham, Samuel W.....Black

Arizona

Aarni, John C.....Hayden
Adams, Freeman H.....Phoenix
Barker, Robert D.....Phoenix
Lukas, John R.....Leupp
McCook, Joel J.....Fort Defiance

Arkansas

Berry, Willard E.....Truman
Blankfort, Gerald.....Little Rock
Capel, Havis T.....Pine Bluff
Harper, Bland R.....Peach Orchard
Hays, William C. Jr.....Hot Springs
Martin, Art B.....Fort Smith
Phillips, Sam.....Little Rock
Smith, Euclid M...Hot Springs Nat'l Pk.

California

Abdo, Francis J.....Los Angeles
Adams, Burton E. E.....San Diego
Boudett, Daniel W.....San Francisco
Boyers, Luther M.....Berkeley
Desch, William D.....Piedmont
Devin, Stephen B.....Los Angeles
Johnson, Clarence E.....Long Beach
Matzen, Warren C.....Beverly Hills
Rogers, Ernest S.....San Francisco
White, John H.....Chico
Wilcox, John C.....Claremont
Willers, Carl E.....Chowchilla

Colorado

Chase, Gaylord R.....Longmont
Christie, George C.....Canon City
Croxdale, Edward L.....Denver
Daywitt, Alvin L.....Denver
Edmonds, Gerald W.....Estes Park
Fieman, Sidney H.....Denver
Hall, Lewis L.....Denver
McCann, Joseph W.....Denver
McDonough, Frank J....Grand Junction
Matchett, Foster.....Denver
Musman, David J.....Denver
O'Donnell, Francis A.....Denver
Plummer, Thomas O.....Montrose
Rupert, Harley S.....Greeley
Wohlauer, Valentin E.....Akron

Connecticut

Barald, Fred C.....New Haven
Birge, Henry L.....West Hartford
Brown, Warren T.....Woodbridge
Calhoun, Hazen A.....Higganum
Carbone, William C.....Hamden
Coates, Stephen P.....Suffield
Conway, David F. Jr.....New Haven
Dugas, Joseph A.....Bridgeport
Freedman, Morris.....New Haven
Gloetzner, Henry J.....S. Norwalk
Goldys, Frank M.....Danbury
Lach, Frank E.....New Haven
Luria, Sydney.....Ansonia
Musante, Thomas P.....Bridgeport
Plaut, Jules A.....New Haven
Rubin, George A.....New Haven
Stevens, Leyland E.....Naugatuck
Tortora, Frank.....New Haven

Delaware

Durham, James R. Jr.....Wilmington
Kullbom, Kenneth B.....Wilmington
Lupton, Albert M.....Lewes
Lynch, John W.....Seaford
Marvil, James E.....Laurel
Tarrant, Harold A.....Wilmington

District of Columbia

Best, William G.....Washington
Brall, Cleo A.....Washington
Dugan, Joseph A.....Washington
Earley, LeRoy W.....Washington
Lowden, Henry M.....Washington
Ritchie, William S.....Washington
Spire, Richard H.....Washington
White, Charles S. Jr.....Washington
Williams, Thomas F.....Washington

Florida

Bowen, Jack H.....Jacksonville
Coleman, Benjamin.....Miami
Floyd, Alve J.....Palmetto
Forastiere, Roger J.....Miami
Hoffmann, Carl D.....Orlando
Martin, Marion C.....Miami
Matthews, Arthur L.....Sarasota
Morse, George W.....Pensacola
Mosley, Robert S.....Miami
Scarborough, Chafee A.....Miami
Williams, Joseph M. Jr.....Lakeland

Georgia

Bedingfield, William O.....Savannah
Blackmar, Francis B.....Columbus
Callahan, Alston.....Atlanta
Green, Gordon L.....Rome
Green, James A.....Atlanta
Grimes, William H. Jr.....Colquitt
Mc Call, John T., Jr.....Rome
McKey, Earle S. Jr.....Valdosta
Mabon, Robert F.....Atlanta
New, James S.....Dexter
Oden, Lewis H. Jr.....Blackshear
Paine, Charles H. Jr.....Atlanta
Palmer, Joseph I.....Thomasville
Pendergrass, Robert C.....Americus
Porch, Leon D.....Macon
Robinow, Meinhard.....Augusta
Roper, Embra A.....Jasper
Sanchez, Adolph S.....Eatonton
Williams, Miles W.....Camilla
Wylie, Moffatt H.....Augusta

Idaho

Abbott, William R.....Idaho Falls
Bauman, James H.....Lewiston
Oldham, Gordon D.....Twin Falls

Illinois

Adams, Vail B.....Evanston
Adamson, Garland N.....Chicago
Baumgarten, Walter J.....Chicago
Beal, Peter L.....Chicago
Chrisos, Sam S.....Chicago
Cohen, Hyman.....Chicago
Esposito, Peter T.....Chicago
Falk, Philip.....Berwyn
Giacobe, Anthony J.....Chicago
Glassman, Jacob A.....Chicago
Hinn, George J.....Highland, Park
Irace, Henry E.....Chicago
Judson, Glenn L.....Evanston
Kaplan, Benjamin.....Chicago
Lindsay, Arthur M.....Chicago
Linn, Herman J.....Chicago
Millet, Roscoe F.....Macomb
Nianick, Leonard M.....Chicago
Norak, Walter V.....Bellwood
Strole, Donald G.....Granite City
Waddington, Harry K.....Rockford
Wright, Theodore S.....Chicago

Indiana

Alexander, James M.....Argos
Alexander, John E.....Evansville
Baumgart, Edward T.....Bedford
Baxter, Samuel M.....Jeffersonville
Beaver, Norman E.....Otterbein
Bizer, Mier.....Jeffersonville
Bledsoe, James G.....New Castle
Clark, Lawson J.....Indianapolis
Colip, George D.....South Bend
Dowd, Joseph A.....Indianapolis
Eikenberry, Hugh W.....Peru
Garling, Luvern C.....Muncie
Haslem, Ezra R.....Terre Haute
Herrmann, Gordon T.....Indianapolis
Hickman, Warren R.....Logansport
Holland, Charles E.....Bloomington
Ingalls, Clair L.....Washington
Jewett, Joe H.....Carmel
Kalb, Everett L.....Indianapolis
Kammen, Leo.....Indianapolis
McCormick, Charles O. Jr...Indianapolis
Mahoney, Charles L.....Terre Haute
Marchant, Clarence H.....Bloomington
Marks, Howard H.....Sullivan
Paletz, Bernard E.....Michigan City
Paris, John M.....Indianapolis
Reed, Harrell L.....Vincennes
Rich, James S.....Evansville
Rohrer, James R.....Washington
Rubin, Milton R.....Gary
Scales, Alfred B.....Oakland City
Williams, Fielding P.....Huntingburg

Iowa

Agnew, James W.....Iowa City
Almer, Lennart E.....Moorehead
Bender, Herman R.....Des Moines
Boyd, Eugene J.....Iowa City
Brecher, Paul W.....Storm Lake
Brown, Merle J.....Davenport
Bullock, Grant D.....Washta
Clark, James P.....Esterville
Cleary, Hugh G.....Fort Madison
Evers, Alvin E.....Pellai
Frank, Jack R.....Crowley
Gibson, Douglas N.....Des Moines
Glomset, Daniel A.....Des Moines
Harms, George E. Jr.....Cedar Rapids
Houlahan, Jay E.....Mason City
Johnson, William A.....Alden
Lungren, John C.....Sioux City
Mark, Milton S.....Des Moines
Marx, Frederick A.....Monroe
Muhs, Emil O.....Muscatine
Noonan, James J.....Marshalltown
Roggen, Ivan J.....Maurice
Rosenbusch, Melville.....Iowa City
Russin, Lester A.....Iowa City
Saar, John W.....Donnellson
Willumsen, Henry C.....Iowa City
Zager, Lewis L.....Oskaloosa
Zimmerman, Henry A.....Iowa City

Kansas

Antrim, Philip J.....Spivey
Blacker, Morris R.....Wichita
Conrad, Richard F.....Kansas City
Diefendorf, Donald M.....Waterville
Dillon, John A. Jr.....Great Bend
Fast, William S.....Atchison
Gaume, James G.....Ellinwood
Graber, Harold L.....Topeka
Lanning, Robert J.....Junction City
Matassarin, Frederick W.....Wichita
Norris, George L.....Winfield
Nunnery, William E.....Coffeyville
Ritter, Norton R.....Baxter Springs
Rook, Lee E.....Kansas City
Rucker, Martin J.....Sabetha
Rueb, Andrew E.....Salina

PHYSICIANS SEPARATED FROM SERVICE

Kentucky

Archer, George P.....Paintsville
Bateman, Robert G.....Richmond
Baughman, Branham B.....Frankfort
Bushart, Robert W.....Fulton
Funk, Jesse T.....Bowling Green
Gibson, Henry H.....Whitesburg
Kremer, Eugene H., Jr.....Louisville

Louisiana

Bannerman, Moss M.....New Orleans
Beckcom, Floyd N.....Shreveport
Bishop, Louis D.....De Quincy
Booth, Edgar W.....Shreveport
Cabibi, Carlo P.....New Orleans
Dupuy, Jules E.....New Iberia
Ellender, Rudolph D.....Houma
Freedman, Ben H.....New Orleans
Gahagan, Henry C.....Alexandria
Genet, George M.....New Orleans
Gordon, Ian E.....New Orleans
Greenberg, Harry B. .....New Orleans
Hardin, Joe H.....New Orleans
McGehee, John W.....Baton Rouge
Magne, Jacques A.....New Orleans
Reed, William K.....New Orleans
Salatich, Blaise P.....New Orleans
White, Henry C. Jr.....New Orleans
Wilds, Charles E. Jr.....Monroe
Willis, Jasper T.....Calhoun
Youngreen, Harold C.....New Orleans

Maine

Fay, Thomas F.....Augusta
Gingras, Napoleon J.....Augusta
Hardy, Theodore E., Jr.....Waterville
Lieberman, Arthur N.....Bangor
Madigan, John B.....Houlton

Maryland

Alexander, Theodore O.....Baltimore
Ashworth, John W. Jr.....Baltimore
Barnett, Charles P.....Baltimore
Carliner, Paul E.....Baltimore
Fulton, William B.....Chevy Chase
Gassaway, William F.....Ellicott City
Govons, Sidney R.....Baltimore
Homan, James B.....Hurlock
Knotts, Frank L.....Baltimore
Knox, James H. M. III.....Baltimore
Ledoux, Clarence W.....Baltimore
Lipin, Raymond J.....Pasadena
Muller, Stephen E.....Bradshaw
Robinson, Daniel R.....Baltimore
Rose, Jerzy E.....Baltimore
Zangara, Henry F.....Baltimore

Massachusetts

Abrams, Arthur L.....Roxbury
Aisner, Mark.....Brookline
Appel, Charles F.....Holyoke
Babson, William W.....Gloucester
Curley, John J.....Leominster
Curtis, David M.....Marlboro
Denton, Joseph H. Jr.....Falmouth
Gilbert, John J.....Boston
Goldsberry, John J.....Worcester
Greene, Thomas F.....Springfield
Homans, John Jr.....Brookline
Hurd, Brooks H.....Eastham
Kaye, Abraham.....Roxbury
Kelleher, John J.....Lawrence
Lamb, Marshall A.....Winchendon
McDonough, Francis E.....Boston
MacDonald, Wilfred D.....Worcester
Marcoux, William G.....Melrose
Mattis, Robert D.....Boston
Meislin, Jacob.....Bedford
Reardon, Edward R.....Boston
Robinson, Elliott S. A....Newton Centre
Scricco, Michael W.....Worcester
Siegel, Robert.....Revere
Solomon, Seymour J.....Chelsea
Ziolkowski, Henry J.....Chicopee

Michigan

Abruzzo, Anthony M.....Detroit
Ahronheim, Jacques H.....Jackson
Brown, Lewis F.....Ostego
Brownson, Kneale M.....Traverse City
Bulmer, Dan J.....Ann Arbor
Graham, John H.....Detroit
Greer, Clarence W.....Detroit
Heald, Gordon H.....East Lansing
Hubly, James W.....Battle Creek
Lambert, Leslie A.....Flint
Loomis, Frederic G.....Detroit
McCadie, James H.....Detroit
Marshall, Millard R.....Detroit
Mumby, Clinton J.....Detroit
Scheuerman, Walter G.....Detroit
Schmaltz, John D.....Detroit
Wilhelm, Symour K.....Detroit
Yntema, Stuart.....Saginaw

Minnesota

Abbott, Clyde B.....Springfield
Arko, Joseph L.....Hibbing
Arny, Frederick P.....Preston
Brekke, Harvey J.....Minneapolis
Burlingame, David A.....Minneapolis
Frank, Joseph E.....Marshall
Freedman, Harold C.....Mineapolis
Freeman, John G.....Peter
Hoffman, George R.....Minneapolis
Horwitz, Solomon E.....Minneapolis
Kelsey, Mavis P.....Rochester
La Bree, John W.....Minneapolis
Leck, Paul C.....Austin
Lind, Carl J., Jr.....Minneapolis
Quigley, Maurice W.....Minneapolis
Ralston, Donald E.....Minneapolis
Ross, Alexander J.....Minneapolis
Sach-Rowitz, Alvin.....Mosse Lake
Schneider, Robert A.....Minneapolis
Schwyzer, Hanns C.....St. Paul

Mississippi

Derrick, Arthur A. Jr.....Jackson
Forbes, Neil M. Jr.....Laurel
Reynolds, Ernest D.....Clinton
Rogers, William H.....Collins
Rush, Gus A. Jr.....Meridian
Thomas, Perry K. Jr.....Tupelo

Missouri

Bailey, William H.....St. Louis
Barnett, Charles H. Jr.....Bolivar
Dalton, Arthur R.....St. Louis
Davis, Wilbur L.....Charleston
Findley, James W.....Graham
Hampton, Stanley F.....University City
Harrison, Stanley L.....Clayton
Johnson, Joseph E.....St. Louis
Johnson, Robert H.....St. Louis
Klaff, Daniel D.....St. Louis
Noah, Joseph W.....Webster Groves
Pearse, Roy W. Jr.....Nevada
Pontius, John R.....Sedalia
Wittler, Harry A.....Lemay
Wulff, George J. L. Jr....University City

Montana

Brunkow, Benjamin H.....Billings

Nebraska

Adler, Verne H.....Omaha
Anderl, Vernon K.....David City
Brown, James M.....Omaha
Gentry, Willard M.....Gering
Greene, Arthur M.....Omaha
Hardy, Clyde C.....Omaha
Hirschmann, Jerome H.....Omaha
McGinnis, Kenneth T.....Ord
Marshall, Philip.....Lincoln
Nelson, John C.....Omaha
Nuernberger, Robert E.....Omaha
Wendland, John P.....Omaha

New Hampshire

Brassard, Roger P.....Laconia
Butterfield, Warren H.....Concord
Galloway, Raymond P.....Suncook
O'Neil, Vincent D.....Concord
Tyson, Mordecai D.....Hanover
Zittel, Harold E.....Buffalo

New Jersey

Anson, Leon J.....Garwood
Assante, Mario H.....Clementon
Buklad, Henry A.....Newark
Calabrese, Dino D.....Fort Lee
Duisberg, Richard E. H.....Teaneck
Eames, William N.....Trenton
Fluck, David A.....Trenton
Giannasio, Joseph.....Jersey City
Lombardi, Frank L.....Bergenfield
McCallion, Luther L.....Ocean City
Nelson, Francis B.....Columbia
Padden, Aloysius F.....Bogota
Rose, William G.....Hightstown
Rosen, Charles D.....West Orange
Wortman, Harry C. Jr.....Belleville

New Mexico

Lancaster, George M.....Clovis

New York

Abel, Louis.....Bronx
Adler, Kurt.....Astoria, L. I.
Bernstein, Charles.....Brooklyn
Billet, Edwin.....Bronx
Butkus, John G.....Hagaman
Calodney, Martin M.....Brooklyn
Chapman, Irving.....Queens
Charles, Charles V.....Brooklyn
Delson, Barnet.....Brooklyn
Felmus, Richard D.....Brooklyn
Frankel, Jerome S.....Brooklyn
Freed, Mathew.....Brooklyn
Glaser, Benjamin.....Brooklyn
Glass, William I.....Bronx
Hanigsberg, Murray J.....Elmhurst
Hardart, Frank J. Jr.....Forest Hills
Krupp, David D.....Brooklyn
Lanfranchi, George P. B.....Bronx
Marra, Alfred F.....Bronx
Mastrangelo, Angelo, Jr.....New York
Preston, William O.....New York
Russell, Paul F.....New York
Wolin, Leonard.....Buffalo
Zabin, Alexander.....Malverne, L. I.

Utah

Allen, Joseph H.....Salt Lake City
Grover, Ernest.....Bicknell
Hammond, Roy B.....Provo
Nielsen, Adolph M.....Salt Lake City

Vermont

Buermann, Henry Jr.....South Hero
French, Paul K.....Burlington
MacMillan, Harry A.....Burlington
Moriarty, Daniel J.....Waitsfield
White, Fletcher H.....Burlington

Wyoming

Ashbaugh, Ralph D.....Riverton
Davidson, Thomas H.....Casper

Hawaii

Tom, Kam S.....Honolulu

RECALLED OR NOT RELIEVED FROM ACTIVE DUTY

Harper, Edwin O.....Arkadelphia, Ark.
Johnson, Harry G.....Buffalo, N. Y.
Kummer, Jerome M...Wallingford, Conn.
Murphy, Franklin D...Kansas City, Mo.
Williams, William H....Charlotte, N. C.
Wright, Harry E.....San Benito, Texas

MEDICAL OFFICERS RELEASED BY THE NAVY

NAVAL RESERVE MEDICAL OFFICERS RECOMMENDED FOR RELEASE FROM ACTIVE DUTY

Alabama

Barnes, John J.....Winfield
Chitwood, John N.....Fort Payne
Davis, Bernell V.....Decatur
Maddox, William A.....Abbeville
Malone, John M.....Birmingham
Pardue, William O. Jr.....Birmingham
Perry, Joseph W.....Bessemer

Arizona

Brown, James A.....Tucson
Fraser, George Jr.....Tucson
Ginn, James A. Jr.....Phoenix
Pearson, John P.....Glendale

Arkansas

Farris, Guy R. Jr.....Little Rock
Guthrie, James.....Prescott
Rogers, Henry N.....Mt. Pleasant
Short, James W.....Pine Bluff

California

Ainslie, Charles A.....Los Angeles
Albasio, Dante L.....Oakland
Alberty, Watie M.....San Diego
Albertson, Henry K.....San Diego
Asher, William M.....Los Angeles
Berg, Bruce M.....Fresno
Birnbaum, Seymour.....Watsonville
Buckingham, John Royal....Los Angeles
Carriker, Eugene W.....San Francisco
Conway, Maurice E.....San Francisco
Crane, Edward H.....Wilmington
Frudenfeld, Joseph C.....Inglewood
Gibbons, Morton R. Jr.....San Francisco
Goldberg, Henry P.....Encino
Goodman, Leo M.....Fresno
Haak, Edward D.....Ojaii
Hanson, Wayne P.....Los Angeles
Harper, Thomas S.....Oakland
Hartley, Philip B.....Los Angeles
Hawkins, George W.....San Gabriel
Hutchinson, Martin.....Santa Rosa
Ireland, Eugene L.....Winters
Lawson, Wallace R.....Berkeley
Lestrohan, Paul F.....San Francisco
Line, Warren S.....North Hollywood
McBain, Earle H.....Los Angeles
McNearney, J. J.....Long Beach
Narkevitz, Joseph F.....Oakland
Page, Emery P.....Berkeley
Paschall, Jack Jr.....Sierra Madre
Pellegrin, Frederick A.....Oakland
Ross, William L.....Los Angeles
Rudee, William J.....San Francisco
Schweifler, John.....San Francisco
Sluder, Fletcher S. Jr.....Palo Alto
Sprague, Charles P.....San Bernardino
Steinmetz, Arthur F.....Hayward
Thurlow, Alfred A. Jr.....Santa Rosa
Walker, Duard L.....San Francisco
Wilson, Clifford C.....San Diego

Connecticut

Conforti, Victor P.....Torrington
Delabarre, Everett M. Jr.....Norwalk
Fryer, Minot P.....Willimantic
Gerow, George H.....Westport
Hays, David S.....New Haven
Lahey, William J.....East Hartford
L'Heureux, Jerome A.....Meriden
Newman, Richard.....Hamden
Pilecki, Peter J.....Meriden
Ryley, Roger N.....Mystic
Staneslow, John S.....Prospect

District of Columbia

Fantazier, Elmer F.....Washington
Kinder, Edward L. Jr.....Washington
Mirick, George S.....Washington
Shea, Samuel H.....Washington
Smith, Hal W.....Washington

Florida

Aucremann, Charles E....St. Petersburg
Browning, John D.....Daytona Beach
Campbell, Elmer B. Jr.....Petersburg
Curry, Robert W.....Bradenton
Larsen, Charles Jr.....Lakeland

Georgia

Giles, Jackson T.....Griffin
Jackson, Joseph M.....Waycross
Lang, Lewis R.....Calhoun
McCrum, Barton A.....Decatur
Nichols, Fenwick T. Jr.....Atlanta
Phillips, Hayward S.....Atlanta
Proctor, William H. Jr.....Atlanta
Ware, Newton C.....Warrenton
Winslow, James A. Jr.....Thomson

Illinois

Burhans, Merton E.....Decatur
Chapman, James C. F.....Evanston
Ebert, Robert H.....Chicago
Ettleson, Abraham.....Chicago
Fikany, Edward D.....Northbrook
Gassler, Robert K.....Chicago
Gibbs, Edward W.....Willmette
Green, Jerome G.....Chicago
Heinen, John H. Jr.....Chicago
Hofer, Jesse W.....River Forest
La Forge, William C.....Rockford
Lippold, Roland W.....Staunton
McClure, Donald W.....Highland Park
Malott, Raymond F.....Manteno
Marty, John P.....Decatur
Olander, George A. Jr.....Springfield
Ostrom, Eugene W.....Chicago
Ramsey, Joseph H.....East St. Louis
Rooney, James A.....Chicago
Rubenstein, Melvin.....Chicago
Schmitz, Robert L.....Chicago
Seibert, Virgil E.....Chicago
Stollar, Clyde P.....Chicago
Sundeen, Reinhold A.....Evanston
Sukov, Marvin.....Chicago
Westmark, Carl.....Oak Park

Indiana

Ball, Warren P.....Indianapolis
Brown, Thomas M.....Muncie
Douglas, William T.....Lafayette
Dumas, Gordon A.....Fort Wayne
English, Max R.....New Albany
McAdams, Hugh B.....Bowell
Raber, Robert M.....Indianapolis
Rhorer, John G.....Marion
Schmidt, Loren F.....W. Terre Haute

Iowa

Bay, Frank N.....Albia
Ellerbroek, Wallace C.....Iowa City
Howell, Carter W.....Grinnell
Layton, Jack M.....Iowa City
Paul, Richard E.....Cedar Rapids
Sheimo, Stanton L.....Creston
Von Lackum, LeRoy F.....Waterloo
Wilson, Charles R.....Ogden

Kansas

Aldis, William.....Pratt
Dunagin, Jack A.....Clay Center
Hyde, Robert F.....Tribune
Lozoff, Milton.....Topeka
Marchand, Malvin C.....Kansas City
Vinzant, Lawrence E.....Wichita

Kentucky

Cowle, Arch E.....Louisville
Hoffman, Charles R.....Louisville
Meyer, Dexter Jr.....Bradford
Riley, George H.....Hebron

Louisiana

Azar, Paul J. J.....New Orleans
Patterson, Charles A.....New Orleans
Smith, Marshall E.....New Orleans
Trautman, Walter J. Jr....New Orleans

Maine

Anderson, Stuart M.....Portland
Nesbitt, Lester R.....Bangor

Maryland

Bassan, Morton E.....Baltimore
Clayman, David S.....Baltimore
Hohman, Leslie B.....Baltimore
McBurney, John T.....Chevy Chase
Mellors, Robert C.....Chevy Chase
Mostwill, Ralph.....Baltimore
Myers, Philip.....Baltimore

New York

Allen, Benjamin L.....New York
Allison, George H.....Yonkers
Brooks, Morris.....Brooklyn
Collins, Leo R.....Rensellaer
Epstein, Frederick M.....New York
Hebblethwaite, Clarence A...Manchester
Herrington, Frank H.....Middletown
Horn, Leo N.....Orangeburg
Kaiser, Thomas F.....Buffalo
Kaplan, Alex H.....Orangeburg
O'Connor, Harold A.....Waterville
O'Grady, Joseph A.....Beacon
Rowe, William A.....Westerleigh, L. I.
Scala, Charles J.....Tuckahoe
Storrs, Richard P.....Thiells
Tullis, Richard H. Jr.....Schenectady
Weishaar, Leo G. Jr.....Westbury, L. I.

Oklahoma

Allen, Clifford W. Jr.....Tulsa
Boatwright, Lloyd C.....Oklahoma City
Carter, Herschel G.....Oklahoma City
Johnson, Robert R.....Britton
Popkess, Fred G.....Dewey
Rogers, William G.....Oklahoma City
Walker, Ethan A. Jr.....Oklahoma City
Walter, Robert C.....Okmulgee
Wendel, William E.....Tulsa

Rhode Island

Buckley, Eli J.....Lincoln
Burns, Frederic J.....Pawtucket
Lagerquist, Albert L.....Riverside
McGrath, James A.....Wakefield

South Carolina

Alexander, Sydenham B.....Columbia
Chapman, William S.....Florence
Galloway, James B.....Columbia
Garland, Newton F.....Kingstree
Ghent, Thomas D.....Lancaster
Myers, Edgar H.....Pamplico
Ross, Hasell G.....Columbia
Thomas, Charles B.....Florence

Tennessee

Baker, A. Merton Jr.....Chattanooga
Crenshaw, Charles P. Jr.....Memphis
Long, Jerome P. Jr.....Memphis
Parker, Joseph B. Jr.....Knoxville
Sherrod, Howell H.....Johnson City

Utah

McAffee, Don B.....Provo

Wisconsin

Bloemers, Harms W.....Cedar Grove
Busby, Walter W.....Milwaukee
Flanagan, Clair M.....Waukesha
Keenan, Hugh C.....Milwaukee
Slaney, Andrew F.....Oconto

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

CALIFORNIA

Section on General Practice.—On September 10 a meeting was held in San Francisco to plan for the creation of a "section on general practice" in the San Francisco Medical Society. In the society's files are 145 names of general practitioners and an additional 19 specialists who list themselves as having an interest in general practice. Dr. Clyde Horner, San Francisco, has been appointed to lay the ground work for the formation of the new section.

Press Relations Program.—At a recent meeting ten members of the San Francisco County Medical Society met with a similar number of newspaper executives to exchange views on all angles of relations between physicians and the press. In an agreement reached at the meeting the editors will protect as far as possible the anonymity of the welfare of the physician and the patient in return for cooperation by the profession in furnishing all news of scientific achievements and sympathetic cooperation in news of other developments. It is planned to set up an information bureau by the society under the direction of Mr. Frank J. Kihm, executive secretary of the society, who will secure for reporters and feature men the information they may require. He will get in touch with the doctor best qualified to answer the question and relay the information to the press. In this way the anonymity of the doctor will be protected and the newspapermen will receive authoritative data. At the same time members of the county medical society may be assured that they will not be subjected to any criticism by the society, because any information they may furnish will be released through official channels and have the implied approval of the society.

ILLINOIS

Study of Child Health Services.—The Illinois Study of Child Health Services of the American Academy of Pediatrics has been organized under the leadership of Dr. Henry G. Poncher, Chicago, the academy state chairman. The Illinois study office is located at 1465 Sherman Avenue, Evanston, with Dr. George S. Frauenberger, Evanston, as executive director and Dr. Jack W. Singleton, Springfield, as executive secretary. A study guide describing the scope, organization and methods of the study is available to those interested. The study has been organized to reach every physician in Illinois district, county and branch society. Study chairmen have been appointed who are working closely with each county and branch medical society and with representatives from state and local professional, service and lay organizations interested in child health care, so that when the tabulated data are complete the structure for using the data as a basis for sound planning for necessary expansion of child health services will be established and functioning.

Chicago

The Hamburger Lecture.—The third Walter Wile Hamburger Memorial Lecture of the Institute of Medicine of Chicago, which was to have been given last May but was canceled on account of the railroad strike, will be delivered at the Palmer House, October 8, by Dr. Samuel A. Levine, assistant professor of medicine, Harvard Medical School, Boston, on "The Treatment of Congestive Heart Failure."

Lecture by Dr. Knisely.—Melvin H. Knisely, Ph.D., associate professor of anatomy, Hull Laboratory of Anatomy, University of Chicago, will address the Institute of Medicine of Chicago at a meeting in the Woodrow Wilson Room, International Relations Center, seventh floor, 84 East Randolph Street, September 27, at 4:45. Dr. Knisely's subject will be "The Structure and Mechanical Functioning of the Living Liver Lobules on Frogs and Rhesus Monkeys." Physicians and members of the allied professions are invited to the lecture.

Report of Medical Center Commission.—The annual report of the Medical Center Commission for 1945 was recently made available. The report contains illustrations, discussions and outlines of pending plans to develop the medical facilities of the west side of Chicago into a medical center. Funds for the development of the medical center district are provided by legislative act. For the biennium ending July 1, 1947, $96,280 for operating expenses was provided under S. B. 331. A land acquisition fund of $1,100,000 was provided under S. B. 417. Under provisions of S. B. 417, Governor Dwight H. Green is charged with the responsibility of approving expenditure for the acquisition of the land. He has delegated to the Illinois Postwar Planning Commission authority to provide him with recommendations. Plans and projects of the Medical Center Commission for the acquisition of land are therefore submitted from time to time to this official citizen body, which passes on request by the Medical Center Commission for portions of its land acquisition appropriation, for use in acquiring specific parcels of land.

INDIANA

Changes in Health Personnel.—Dr. Harry P. Ross, Richmond, has been named secretary of the Richmond Board of Health, succeeding the late Dr. George B. Hunt. Dr. Arthur J. Whallon, Richmond, has been appointed a member of the board.——Dr. Luke W. Frame, Washington, has been appointed medical director of the branch office in Washington of the state board of health with jurisdiction over southwestern Indiana. This district is one of five set up under a decentralization program by the state board of health (THE JOURNAL, March 9, p. 657).

KANSAS

Cancer Detection Clinic.—A cancer detection clinic has been opened in Parsons, the first of its kind in the state. Members of the Labette County Medical Society are participating in the clinic. On July 3, 117 patients were examined; 97 came for the first time and 20 were there for rechecks. Among the number, 10 were found to need treatment.

Dr. McGavran in New Public Health Position.—Dr. Edward G. McGavran, health officer of St. Louis County, Clayton, Mo., has been appointed professor and head of the new department of public health and preventive medicine at the University of Kansas School of Medicine, Kansas City. He will also serve as education consultant in public health and preventive medicine for the Kansas State Board of Health.

New Director of Tuberculosis Control.—On July 1 Dr. Paul V. Joliet, who has been carrying on tuberculosis work for the U. S. Public Health Service, Bethesda, Md., was appointed director of the division of tuberculosis control, Kansas State Board of Health, filling the vacancy created by the resignation of Dr. Homer L. Hiebert, who is taking graduate work in radiology at Harper Hospital, Detroit. Dr. Joliet is on loan to Kansas by the U. S. Public Health Service.

KENTUCKY

State Medical Meeting.—The Kentucky State Medical Association will hold its ninety-sixth meeting at the Irvin Cobb Hotel, Paducah, September 30-October 3, under the presidency of Dr. J. Watts Stovall, Grayson. The speakers on the program include:

Dr. Warren V. Pierce, Covington, Streptomycin in the Treatment of Urinary Tract Infections.
Dr. Rankin C. Blount, Lexington, The Pathogenesis and Treatment of Essential Hypertension.
Dr. Thomas M. Marks, Lexington, What Benefit If Any Does Prostigmine Offer to Cerebral Palsy?
Dr. Lon C. Hall, Paintsville, Summer Diarrhea of Infants and Children in Office Practice.
Dr. Elmer Belt, Los Angeles, Obstructive Uropathy in Childhood.
Dr. Coleman C. Johnston, Lexington, Changing Trends in Surgical Treatment of Peptic Ulcer.
Dr. Clyde C. Sparks, Ashland, Minor Surgery by the General Practitioner.
Dr. Elbert W. Jackson, Paducah, He Looked in the Liver.
Dr. Olin West, Chicago, The American Medical Association.
Dr. Jesse T. Funk, Bowling Green, Postoperative Care of the Surgical Patient.
Dr. Robert W. Robertson, Paducah, Traumatic Diaphragmatic Hernia.
Dr. Delmas M. Clardy, Hopkinsville, A Less Painful Hemorrhoidectomy.
Dr. Robert H. Barr, Owensboro, Obesity, Its Causes, Effects and Clinical Management.
Dr. Carlos A. Fish Jr., Louisville, Meningococcic Infections.
Dr. Everett H. Baker, Louisville, Intravenous Anesthesia with Pentothal Sodium.
Dr. Maurice G. Buckles, Louisville, Practical Aspects of Chest Surgery.
Dr. Harry S. Andrews, Louisville, Blood Dyscrasias in Children.
Dr. Laman A. Gray, Louisville, Practical Hormone Therapy.
Dr. William K. Keller, Louisville, Psychiatry for the General Practitioner.
Dr. Robert F. Monroe, Louisville, Antepartum Bleeding.
Dr. Malcolm D. Thompson, Louisville, The Treatment of Goiter.
Dr. Charles M. Edelen, Louisville, Surgery in the Newborn.
Dr. Hal E. Houston, Murray, Management of Acute Brain Injuries.

There will be an oration in medicine by Dr. Samuel A. Overstreet, Louisville, on "More Stately Mansions," and one in surgery given by Dr. Samuel H. Flowers, Middlesboro, on "Civilian Application of Wartime Surgical Advances."

MASSACHUSETTS

George Maison to Head Pharmacology Department.—Dr. George L. Maison, Needham, associate professor of physiology at the Boston University School of Medicine, has been appointed professor of pharmacology and head of the department of pharmacology, according to an announcement August 23. Dr. Maison graduated at Northwestern University Medical School, Chicago, in 1935. He was chief of the Acceleration Unit, Aeromedical Laboratory Engineering Division, Wright Field, and has been on the faculty of Boston University since December 1945.

One Hundred Years of Ether Anesthesia.—The one hundredth anniversary of the first public demonstration of ether anesthesia will be observed at the Massachusetts General Hospital, Boston, October 14-16. The program has been divided into sessions on surgery, progress in the study of degenerative diseases, fundamental nature of the anesthesia process, some basic problems of anesthesia, physiologic effects of wounds, and the hospital in the community. Among the numerous speakers on the program will be the following from outside the state of Massachusetts:

Dr. Michael E. DeBakey, New Orleans, Military Surgery in World War II.
Dr. Charles B. Huggins, Chicago, The Surgical Approach to the Problem of Malignant Disease.
John J. Bittner, Ph.D., Minneapolis, Characteristics of the Mammary Cancer Milk Agent in Mice.
Edmund V. Cowdry, Ph.D., St. Louis, Accelerated and Retarded Aging of the Skin and Its Consequences.
Dr. Ralph W. Gerard, Chicago, Anesthetics and Cell Metabolism.
Irving Langmuir, Sc.D., Schenectady, N. Y., Correlations and General Remarks.
Dr. Robert D. Dripps, Philadelphia, Effect of Anesthetics on Chemical Mediation of Nerve Impulses.
Dr. Rafael Lorente de Nó, New York, The Effects of Ether and Other Anesthetics on the Electrical Properties of Nerve Fibers and Cells.
Dr. Benjamin H. Robbins, Nashville, The Anesthetic Activity Fluorinated Hydrocarbons.
Dr. Everett I. Evans, Richmond, Va.,
Dr. Carl A. Moyer, Dallas, Some Effects of Anesthesia, Load and Composition on the Excretion of Water and Salt.
Mr. Winslow Carlton, New York, The Problem of Social Medicine, Equilibrating the Distribution and Technology of Medical Care.

On Wednesday evening, October 16, a public meeting will be held in Sanders Theater to hear:

Raymond B. Fosdick, LL.D., New York, The Need for Wider Research.
Dr. Evarts A. Graham, St. Louis, The Influence of the Discovery of Ether on the Development of Surgery.
Dr. Henry K. U. Beecher, Boston, The Emergence of Anesthesia's Second Power.
Karl T. Compton, LL.D., Cambridge, Mass., Medical Interest in Radioactivity from Becquerel to Bikini.

MICHIGAN

Arthur Frisch Goes to Oregon.—Dr. Arthur W. Frisch, associate professor of bacteriology and clinical pathology, Wayne University College of Medicine, Detroit, has resigned to become associate professor of bacteriology at the University of Oregon School of Medicine, Portland. Dr. Frisch has been a member of the Wayne faculty since 1937, returning to the staff in February after more than three years' service in the U. S. Army.

MINNESOTA

Personal.—"Dr. Friesleben Day" was observed at the Municipal Park, Sauk Rapids, June 30, in honor of the completion of Dr. William Friesleben's thirty-ninth year of practice in the city.——Dr. Alcibiades A. Giroux, Moore Lake, has been appointed health officer of North Mankato to succeed Dr. Helmer J. Nilson.

Creation of Eye Bank Favored.—The establishment of an eye bank similar to the Eye Bank for Sight Restoration, Inc., in New York and the one in Cook County Hospital, Chicago, has been recommended by the state committee on ophthalmology to the house of delegates of the Minnesota State Medical Association.

MONTANA

State Medical Election.—At a recent meeting of the Montana State Medical Association Dr. Louis W. Allard, Billings, was named president-elect and Dr. Maurice A. Shillington, Glendive, was installed as president. Other officers include Dr. Clyde H. Fredrickson, Missoula, vice president; Dr. Herbert T. Caraway, Billings, secretary-treasurer; Dr. Raymond F. Peterson, Butte, delegate to the American Medical Association, and Dr. Thomas L. Hawkins, Helena, alternate delegate to the American Medical Association.

NEBRASKA

Personal.—Dr. Harry W. Francis, Barcroft, recently completed fifty years in the practice of medicine.——Dr. Rufus A. Lyman, Lincoln, for many years director of student health at the University of Nebraska, has retired.

NEW JERSEY

Clearing House of Information.—To give further service to the doctors of New Jersey, the state medical society has established a clearing house of information on physicians available as associates or office assistants. The society has a list of physicians available and will forward names and addresses of those who meet requirements. Similarly any practitioner who is looking for a placement is welcome to file that fact with the executive offices of the Medical Society of New Jersey, 315 West State Street, Trenton 8. Data should include age, states in which licensed, army or navy experience, professional background, and type and place of association desired.

Human Death Attributed to DDT.—One of the first deaths of a human being attributed to DDT was reported in Collingwood, August 26. Coroner Joseph Myrtetus, Camden County, according to the Associated Press, gave the verdict that Houseman M. Kille, aged 53, had died from accidental inhalation of concentrated fumes of DDT. The reports indicated that Kille, purchasing agent for a pharmaceutical laboratory, went to his summer lodge near Stroudsburg, Pa., August 22 and sprayed it with a highly concentrated solution of DDT in order to kill spiders. He died August 27. His physician is reported to have said that Kille had been under treatment for a heart condition and that "there is not the slightest question that Kille's death was attributable to inhaling the DDT vapor and that alone. His heart condition had nothing to do with the case."

NEW YORK

Cancer Teaching Day.—On October 10 a Regional Cancer Teaching Day will be observed at the Hermann M. Biggs Memorial Hospital, Ithaca, under the auspices of the Medical Society of the County of Tompkins, Medical Society of the State of New York and the division of cancer control of the New York State Department of Health. Among the speakers will be:

Dr. Richmond Douglass, Ithaca, Cancer of the Lung.
Dr. John H. Garlock, New York City, Cancer of the Esophagus.
Dr. Gray H. Twombly, New York City, Cancer of the Cervix.
Dr. Cushman D. Haagensen, New York City, Cancer of the Breast.

Course in Hospital Administration.—A course in hospital administration and management, with major emphasis on mental hospitals, will be inaugurated by the state department of mental hygiene, September 26. The course, which will run for ten months, will consist of monthly sessions, to be held on the final Thursday of each month in Hearing Room number 2 in the Governor Alfred E. Smith State Office Building. It will be open not only to associate directors and administrative assistant directors of the institutions in the department of mental hygiene but also to administrative officers of the institutions of the departments of health and correction.

District Meeting.—The fortieth meeting of the seventh district branch of the Medical Society of the State of New York will be held at the Rochester Academy of Medicine, Rochester, September 26, under the presidency of Dr. Lloyd F. Allen, Pittsford. Among the speakers will be:

Dr. John Romano, Rochester, Methods of Psychotherapy in Medical Practice.
Dr. Harry E. Bacon, Philadelphia, Abdominal Perineal Proctosigmoidectomy Without Colostomy and With Preservation of Sphincter Muscles.
Dr. Albert D. Kaiser, Rochester, Aims and Purposes of the Council of Rochester Regional Hospitals.
Dr. Milton G. Bohrod, Rochester, Bone Marrow Aspiration in Diagnosis.

Changes in Health Personnel.—Dr. Edward B. Bukowski, Syracuse, acting deputy state health officer of the Syracuse-Rochester districts, state department of health, has been appointed director of child hygiene of Buffalo, succeeding Dr. Edward J. Durney. Dr. Anthony J. Manzella, Buffalo, has been appointed full time director of communicable diseases. Dr. Durney, whose retirement was effective July 1, has served the city health department thirty-six years, first serving as medical school examiner in 1910 and becoming director of child hygiene in February 1928. Dr. Joseph P. Garen, Saranac Lake, has been named district health officer of Rochester, succeeding Dr. Bukowski. Dr. Nathaniel Jones, Rochester, has been appointed deputy health officer in charge of venereal diseases.——Dr. Albert J. Addesa, Buffalo, has been appointed health officer of Lancaster, succeeding the late Dr. Clarence H. Mackey.

New York City

Allen Whipple Named Clinical Director at Memorial Hospital.—Dr. Allen O. Whipple, who will retire September 30 with the title of Valentine Mott professor emeritus of surgery, Columbia University College of Physicians and Surgeons, has been announced as clinical director of the Memorial Hospital for the Treatment of Cancer and Allied Diseases. Before taking up his duties as clinical director of Memorial Hospital on Feb. 1, 1947, Dr. Whipple will go to England to study the cancer activities there and visit the American University of Beirut, Lebanon, of which he is a trustee, and act as consultant in the reorganization of the medical center there (THE JOURNAL, Dec. 29, 1945, p. 1279).

Group Practice Unit at Montefiore Hospital.—Dr. Henry B. Makover, Baltimore, until recently senior surgeon (R), U. S. Public Health Service, assigned as chief, health services branch, office of labor, War Food Administration, has been appointed associate director of Montefiore Hospital, effective September 1. Dr. Makover has completed a study on the possibility of establishing a group practice unit in Montefiore Hospital. He will concern himself with administrative problems in the hospital while developing the plans for the group practice unit which the board of trustees has already approved in principle. It is planned to add a medical assistant director to the executive staff of the hospital as soon as the group practice unit becomes a major activity.

OHIO

Radiologists Reorganize.—Dr. Arnold D. Piatt, Newark, was elected president of the Central Ohio Radiological Society, which was organized in May, and Dr. Hugh A. Baldwin, Columbus, secretary. Active membership is open to radiologic specialists living within a convenient radius of Columbus and associate membership to those not specializing in radiology but who are interested in the subject. Dues are $10 a year for active members and $2.50 for associate members.

Personal.—Dr. David M. Creamer, Bellaire, recently released from military service, has been appointed to the Bellaire board of education.——Dr. DeWitt C. Lavender, Mansfield, has been appointed coroner of Richland County to fill the unexpired term of the late Dr. Lewis B. McCullough, Mansfield.——Dr. George W. Heffner recently completed fifty years of practice in Circleville.——Dr. Ora O. Fordyce, Toledo, resigned July 2 after twenty-seven years as superintendent of the Toledo State Hospital and has been succeeded by Dr. Joseph E. Duty, Toledo, his assistant since 1938.——Dr. Philip T. Knies, assistant clinical professor of medicine at the Ohio State University College of Medicine, Columbus, has been appointed by the governor as a member of the Ohio Public Health Council for a term beginning July 1 and ending June 30, 1953. Dr. Knies succeeds Dr. Russel G. Means, Columbus, who declined reappointment.

Gift to Cleveland Medical Library.—The Cleveland Medical Library announced that Dr. Edward H. Cushing, Cleveland, has donated to it his personal collection of medical books of historical interest, consisting of about 400 items assembled during the past thirty years. Dr. Cushing, who joined the library in 1925, has been a fellow since 1930 and a trustee since he was first elected in 1932. He served as director of the library from 1938 until 1941, when he left Cleveland to serve in the U. S. Navy. He has again left Cleveland for Washington, where he will serve as chief of education in the Veterans Administration department of medicine and surgery. In the main reading room of the Cleveland Medical Library, which is a memorial to the Cushing family, hang portraits in oil of Erastus (1802-1893), Henry Kirke (1827-1910), Edward F. (1862-1911) and Harvey (1869-1939). Harvey Cushing delivered the principal address at the dedication of the Allen Memorial Library Building on Nov. 13, 1926.

OREGON

State Medical Meeting.—The seventy-second meeting of the Oregon State Medical Society will be held at the Gearhart Hotel, Gearhart, September 26-28, under the presidency of Dr. Lansford M. Spalding, Astoria. Among the speakers will be:

Dr. Carl G. Heller, Portland, Use of Testosterone.
Dr. Moses E. Steinberg, Portland, Surgical Treatment of Recurring Peptic Ulcerations, Based on Seventy Gastrectomies.
Dr. John A. Anderson, Salt Lake City, Quantitative Aspects of Fluid Therapy in Infants and Children.
Dr. Frank B. Queen, Portland, Some Current Problems in Cancer.
Dr. Louis Sanford Goodman, Salt Lake City, Recent Advances in Therapy.
Dr. Martin A. Howard, Portland, The Use of Curare in Abdominal Surgery.
Dr. Henry H. Lerner, Salt Lake City, Errors in Radiologic Diagnosis.
Dr. Winifred H. Bueermann, Portland, Problems Encountered in the Surgical Management of Colon Fistulas of Traumatic Origin.
Dr. Arthur C. Jones, Portland, Physical Medicine and Medical Rehabilitation.
Drs. Nathaniel D. Wilson and Joseph W. Nadal, Portland, The Value of the Voluntary Cough in the Prevention of Postoperative Atelectasis.
Dr. John E. Raaf, Portland, The Diagnosis of Spinal Cord Tumors.
Dr. Leon F. Ray, Portland, Ringworm of the Scalp.
Dr. Theodore L. Hyde, The Dalles, Convulsions During Inhalation Anesthesia.
Dr. John G. P. Cleland, Oregon City, Continuous Caudal and Paravertebral Block in Obstetrics and General Surgery.

At an annual dinner given September 27 Dr. George S. Lull, Secretary and General Manager of the American Medical Association, Chicago, will speak on "Activities of Organized Medicine."

TEXAS

Bacteriologist Honored.—A dinner was held recently by the Bacteriology Club of the University of Texas Medical Branch, Galveston, to honor Dr. William B. Sharp, professor of bacteriology, in recognition of his twenty-five years of continuous service to the school.

Personal.—Morris Pollard, Ph.D., has been appointed assistant professor of preventive medicine at the University of Texas Medical Branch, Galveston, and director of the virus laboratory. Dr. Pollard was recently separated from the army as lieutenant colonel in charge of the virus laboratory of the Eighth Service Command at San Antonio. Dea B. Calvin, Ph.D., has been named dean of students and curricular affairs at the University of Texas Medical Branch.——Dr. Albert W. Diddle, Dallas, has been appointed associate professor of obstetrics and gynecology at Southwestern Medical College, Dallas.

Gift of Orthopedic Reprints.—Dr. Walter G. Stuck, San Antonio, has donated 5,054 reprints on orthopedic subjects to the library of the State Medical Association of Texas. The collection was assembled by Dr. Stuck over a period of about twenty years. While they will be available for lending on request by subject, each will be identified as a part of the "Dr. Stuck Collection of Orthopedic Reprints," so that they may be kept intact as a unit when not out on loan. A suitable plaque will also identify the collection to visitors to the library. According to the *Texas State Journal of Medicine* this is the second collection of reprints received as a gift to the library, each having been carefully accumulated by the donor. The first such collection received, a much smaller but a valuable one on coccidioidomycosis, was given by Dr. Victor E. Schulze, San Angelo.

UTAH

Radiologic Conference.—The University of Utah Radiological Conference has been established by the department of radiology of the university medical school to provide graduate instruction and staff discussion of diagnostic problems. The meetings are held the first and third Thursdays every month from 7:30 to 10 p. m. at the Salt Lake County General Hospital, Salt Lake City, during the months of September to June. All physicians are invited to bring cases for presentation. Dr. John P. Caffey, associate professor of pediatrics, Columbia University College of Physicians and Surgeons, New York, spoke at the first conference, September 5. Dr. Henry H. Lerner, Salt Lake City, is secretary of the conference.

WEST VIRGINIA

Cancer Society Changes Name.—The West Virginia division of the American Cancer Society was reorganized at a meeting at Parkersburg, August 1, and the name changed to the West Virginia Cancer Society, Inc. New officers include Dr. Chauncey B. Wright, Huntington, chairman; Dr. Thomas F. E. Dess, Keyser, vice chairman; Mr. Charles Lively, Charleston, secretary, and Homer Gebhardt, Huntington, treasurer.

Activities of State Health Department.—The West Virginia Health Department has discontinued mailing photostatic copies of original birth certificates to parents, because of a reduction in federal funds made available to the state department of health. The policy of sending out copies of birth certificates was inaugurated in 1945 in an effort to guard against errors. As another result of the reduction in the budget, the position of director of public health education has been eliminated. This bureau was established more than a year ago, and Mrs. Ruth J. Franz was named director (THE JOURNAL, Sept. 15, 1945, p. 223). The work of the bureau will be continued on a reduced basis by other state health department personnel. Dr. Charles C. Hedges, director of the bureau of communicable diseases, state health department, has

resigned, effective July 30, to become health officer of Kings County, Hanford, Calif. Mr. H. Gardner Bourne, who has been acting director of the bureau of industrial hygiene, resigned August 1. He has accepted a position as engineer with the Bureau of Industrial Hygiene, Ohio State Department of Health, Columbus. Mr. Bourne has been acting director of the bureau since the resignation of Dr. Charles McKinley last March.

WISCONSIN

Postgraduate Clinic.—The Jackson Clinic, Madison, will hold a postgraduate clinic, September 21. In addition to the eleven presentations by staff members of the clinic, Dr. Eben J. Carey, dean, Marquette University School of Medicine, Milwaukee, will speak on "The Veteran in Relation to Medical Education."

Sture Johnson Head of Dermatology.—Dr. Sture A. M. Johnson, formerly of New York, has been appointed professor of dermatology and syphilology and head of the department at the University of Wisconsin Medical School, Madison, effective September 1. Dr. Johnson succeeds Dr. Otto H. Foerster, who retired with the rank of emeritus professor on July 1.

Training Allowance Policy for Health Officers.—A training allowance of $360 per month is being offered by the Wisconsin State Board of Health for postgraduate training in public health. This stipend, plus tuition and the cost of travel, is being offered to physicians selected as district health officers under the civil service requirements of the state. One or two full semesters of training at a university having an accredited public health course will be offered to those who qualify for district health officer positions. Civil service requirements for these positions call for a license to practice medicine in the state of Wisconsin or eligibility therefor, and preference is given to veterans. Owing to the extreme shortage of medical personnel, the age limit on the selection of physicians for training has been raised to 50 years; however, preference will still be given to applicants in the younger age groups. On completion of their training the physicians will return to Wisconsin and be placed in charge of one of the state's ten district health offices to direct a program of public health activities. Physicians interested in applying for the training or desiring more information about it should write the Wisconsin State Board of Health, Madison.

State Medical Meeting.—The 105th meeting of the State Medical Society of Wisconsin will be held at the Hotel Schroeder, Milwaukee, October 7-9, under the presidency of Dr. Patrick R. Minahan, Green Bay. Among the speakers on the program will be:

Dr. M. Herbert Barker, Chicago, Infectious Hepatitis.
Dr. George M. Curtis, Columbus, Ohio, Use of Thiouracil and Lugol's Solution in the Preoperative Preparation of the Thyrotoxic Patient.
Dr. Paul D. White, Boston, The Most Important Therapeutic Measures in the Treatment of Hypertensive Heart Disease.
Dr. Dallas B. Phemister, Chicago, Treatment of Ununited Fractures by Bone Graft Without Tie or Screw Fixation.
Capt. Leslie L. Veseen, M. C., Chicago, Antibiotics in Venereal Disease.
Dr. Wesley W. Spink, Minneapolis, Antibiotics.
Dr. Harris B. Shumacker Jr., Baltimore, Trench Foot, Immersion Foot and Frostbite.
Dr. Ashley W. Oughterson, New York, The Medical Effects of the Atomic Bomb in Japan.
Dr. Jay A. Myers, Minneapolis, The Physician and Tuberculosis.
K. A. Kirkpatrick, St. Paul, Today's Health Problems for Farmers.
Dr. Carl V. Moore, St. Louis, Use of Folic Acid in Treatment of Macrocytic Anemias.
Dr. Oswald H. Robertson, Chicago, New Methods for the Control of Acute Respiratory Infections.
Dr. Jacob P. Greenhill, Chicago, Gynecologic Endocrinology in General Practice.
Dr. Frank N. Knapp, Duluth, Minn., Ocular Tuberculosis.
Dr. Frederick A. Figi, Minneapolis, Malignant Tumors of the Pharynx and Larynx.
Dr. Charles Anderson Aldrich, Minneapolis, Allowing Young Children to Do Their Stuff.
Dr. George M. Curtis, Columbus, Ohio, Surgery of the Spleen.
Dr. Roger L. J. Kennedy, Minneapolis, The Use of Antibiotics in Pediatrics.

Dr. William J. Bleckwenn, professor of neuropsychiatry, University of Wisconsin Medical School, Madison, will deliver the Theresa Rogers Memorial Lecture on "What World War II Has Done for Neuropsychiatry."

WYOMING

Medical Society Reactivated.—On July 8 at a meeting at the home of Dr. Charles W. Jeffrey, the Carbon County Medical Society was reactivated. Officers chosen include Drs. Jeffrey, president; Orlay E. Plummer, vice president, and James E. Cashman, secretary, all of Rawlins. The *Rocky Mountain Medical Journal* states that nine of the eleven county medical societies listed in the state secretary's book are active.

GENERAL

New Medical Journal.—J. P. Lippincott Company, Philadelphia, announces a new monthly medical journal for the "family doctor." The name of the new publication is *American Practitioner* and the first issue is to appear this month. Dr. John B. Youmans, professor of medicine, Vanderbilt University School of Medicine, Nashville, Tenn., will be the editor.

Mead Johnson Vitamin A Fund.—The American Pediatric Society has received $15,000 from Mead Johnson and Company, Evansville, Ind., to be known as the "Mead Johnson Vitamin A Fund." Grants-in-aid from this fund will be used for research and studies in the field of fat soluble vitamins. A committee consisting of Drs. Edward A. Park, Baltimore; Allan M. Butler, Boston, and Daniel C. Darrow, New Haven, Conn., was appointed to administer all grants-in-aid in connection with the use of funds. All applications for grants and correspondence should be addressed to Dr. Park, 601 North Broadway, Baltimore 5.

Campaign on Heart Disease.—To further interest in the control of heart disease the Metropolitan Life Insurance Company is conducting a special campaign on heart disease during the fall and winter months. At that time the company's more than 20,000 field representatives, in cooperation with official and voluntary agencies, will reach the homes of millions of policyholders with a recently published pamphlet, Your Heart, developed in cooperation with the American Heart Association. A lay educational film on heart disease is also being prepared. Distribution will be made to physicians of a packet in which will be included material of special interest to doctors, and a scientific exhibit on heart disease, first shown at the American Medical Association meeting in San Francisco, is available for state and local professional meetings.

Dr. Parran Named Delegate to World Health Meeting.—President Truman announced September 1 the appointment of Dr. Thomas Parran, Washington, D. C., Surgeon General, U. S. Public Health Service, as United States delegate to the interim commission of the World Health Organization. Dr. Henry Van Zile Hyde, also of the public health service, currently detailed to the division of international labor, social and health affairs, state department, was named alternate delegate. The interim commission will meet at Geneva, Switzerland, in November for the first of the meetings to be held every four months. The commission will handle any urgent health problems that may arise before the World Health Organization gets under way and will formulate plans for setting up the permanent structure of the World Health Organization.

Smallpox Declines.—Smallpox reached its lowest ebb in the United States in 1945, according to statisticians of the Metropolitan Life Insurance Company. Last year only 346 cases were reported in the entire country, and thirteen states and the District of Columbia were completely free of the disease. In Canada only 5 cases were reported, the statisticians say. The steady decline of the disease is strikingly brought out by the statisticians by contrasting the 346 cases in 1945 with the 48,920 cases reported in the United States as recently as 1930. The smallpox-free states last year, all located on the Atlantic seabord, were Connecticut, Delaware, Florida, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont and West Virginia and the District of Columbia. Top honors went to Rhode Island, which has not had a case since 1928. The poorest records were made by Indiana, with 50 cases; Arkansas, 31, and Mississippi, 25.

Finney-Howell Research Fellowships.—Announcement has been made by the Finney-Howell Research Foundation, Inc., that all applications for fellowships for next year must be filed in the office of the foundation, 1211 Cathedral Street, Baltimore, by Jan. 1, 1947. Applications received after that date cannot be considered for awards, which will be made March 1, 1947. This foundation was provided for in the will of the late Dr. George Walker of Baltimore for the support of "research work into the cause or causes and the treatment of cancer." The will directed that the surplus income from the assets of the foundation together with the principal sum should be expended within a period of ten years to support a number of fellowships in cancer research, each with an annual stipend of two thousand dollars, "in such universities, laboratories and other institutions, wherever situated, as may be approved by the board of directors." Fellowships carrying an annual stipend of $2,000 are awarded for the period of one year, with the possibility of renewal up to three years; when deemed wise by the board of directors, special grants of limited sums may be made to support the work carried on under a fellowship.

Award of First Industrial Research Medal.—On October 17 Willis Rodney Whitney, LL.D., Schenectady, N. Y., organizer in 1900 of the General Electric Research Laboratories, which he directed until he retired in 1932, will receive the first Industrial Research Institute Medal for outstanding contributions "to the field of industrial research as a distinguished scientist, a pioneer of industrial research, and a leader and molder of men." This will be the initial presentation of the Industrial Research Institute Medal. In a statement to the press Dr. Charles S. Venable, president of the institute, 60 East 42d Street, New York 5, said that the "dean of industrial research directors" should be the first to receive it. The rules governing the award state that it shall be presented by the institute as a high honor and shall be given for an outstanding contribution to the field of industrial research. This is to be interpreted in a broad sense as including publications, papers presented, discussions, educational work, technical achievement if it contributes broadly to industrial research, methods of operating industrial research laboratories, matters dealing with personnel, group leadership in industrial research, management leadership in industrial research or other accomplishment which promotes the interest of industrial research.

Chamber of Commerce Opposes Antivivisection Legislation.—Research on animals for the development of life-saving medical knowledge has been endorsed by the Chamber of Commerce of the United States in a statement of policy released recently by Howard Strong, secretary of the Health Advisory Council of the Chamber of Commerce. Mr. Strong announced the policy as the result of a referendum vote of member organizations. The statement submitted for the vote is as follows: "In view of the great progress that has been made in preventive and curative medicine and surgery through animal research and the prospect of even greater progress in the future, the National Chamber is unalterably opposed to the prohibition of this scientific procedure. Such a prohibition would seriously hamper all medical progress." Result of the vote was 2,424 organizations in favor of the statement, 18 against. Represented in the poll was slightly over a million business men. Mr. Strong, in a letter to Dr. Anton J. Carlson, Chicago, president of the National Society for Medical Research, announced the outcome of the Chamber of Commerce referendum and said "we are therefore now in a position to present the chamber's opposition to any antivivisection legislation wherever such legislation rears its head and, when advisable and possible, a representative of the chamber can appear in opposition."

Name Judges for Science Writing Award.—The judges who will select the winner of the first annual George Westinghouse Science Writing Award, sponsored by the American Association for the Advancement of Science, have been announced. Morris Meister, Ph.D., director of the National Science Teachers Association and principal of the Bronx, N. Y., High School of Science, is chairman of the group. The newspaper members of the panel are Wilbur Forrest, assistant editor of the New York *Herald Tribune* and president of the American Society of Newspaper Editors, and W. S. Gilmore, editor in chief of the Detroit *News* and a past president of the American Society of Newspaper Editors. Science is represented by James B. Conant, Sc.D., president of Harvard University, Cambridge, Mass., and president of the American Association for the Advancement of Science, and by Dr. Anton J. Carlson, professor emeritus in physiology at the University of Chicago and a past president of the American Association for the Advancement of Science. Miss Sally Butler, Indianapolis, president of the National Federation of Business and Professional Women's Clubs, and Senator Elbert D. Thomas of Utah, chairman of the Senate's Military Affairs Committee, will represent the public. The George Westinghouse Science Writing Award consists of a $1,000 prize for the best newspaper science story of the year by a newspaper or press association writer (THE JOURNAL, May 18, p. 245). The purpose is to encourage and maintain a high standard of science reporting. It was established from a fund granted by the Westinghouse Educational Foundation, which is supported by the Westinghouse Electric Corporation in honor of George Westinghouse, the centennial of whose birth is being celebrated this year. The fund is administered by the American Association for the Advancement of Science. Entry blanks and rules of the competition may be obtained from Willard L. Valentine, Ph.D., chairman awards managing committee, Smithsonian Institution Building, Washington 25, D. C. To qualify for the award, competitors must submit science stories published between Oct. 16, 1945 and October of this year, the deadline for the entries to be considered for the 1946 award. The award will be presented at a luncheon in Boston late in December, to which the winner will be brought, expenses paid.

Prevalence of Poliomyelitis.—Reports of cases of poliomyelitis for the periods indicated have been received from the division of public health methods, U. S. Public Health Service, as follows:

Division and State	Sept. 7, 1946	Sept. 8, 1945	Median, 1941-45	Total to Sept. 7, 1946	Total to Sept. 8, 1945
New England States:					
Maine	1	10	2	16	50
New Hampshire	7	1	1	90	19
Vermont	2	8	3	19	32
Massachusetts	16	30	23	97	211
Rhode Island	7	1	1	25	2
Connecticut	8	9	9	47	114
Middle Atlantic States:					
New York	101	114	71	645	1,122
New Jersey	15	60	32	143	596
Pennsylvania	20	62	62	143	369
East North Central States:					
Ohio	52	33	33	371	216
Indiana	47	28	16	181	120
Illinois	199	131	45	1,245	563
Michigan	55	11	11	455	85
Wisconsin	130	19	14	560	70
West North Central States:					
Minnesota	199	17	17	2,019	61
Iowa	30	9	9	308	88
Missouri	120	31	14	661	116
North Dakota	66	5	4	301	13
South Dakota	45	1	1	286	6
Nebraska	40	7	8	304	42
Kansas	50	13	7	511	64
South Atlantic States:					
Delaware	2	3	1	11	20
Maryland	9	5	5	58	63
District of Columbia	3	4	4	15	82
Virginia	4	30	15	72	243
West Virginia	5	9	3	47	42
North Carolina	8	11	11	73	92
South Carolina	0	6	4	18	147
Georgia	8	3	3	117	74
Florida	16	0	0	463	51
East South Central States:					
Kentucky	3	4	8	76	37
Tennessee	16	30	13	119	281
Alabama	6	4	4	318	115
Mississippi	21	1	4	227	39
West South Central States:					
Arkansas	33	5	1	249	32
Louisiana	16	7	5	261	56
Oklahoma	33	10	1	266	138
Texas	20	30	11	707	744
Mountain States:					
Montana	5	7	1	77	14
Idaho	5	1	0	17	7
Wyoming	5	2	2	80	9
Colorado	72	23	6	651	81
New Mexico	15	1	1	105	12
Arizona	7	1	1	81	10
Utah	13	23	4	68	144
Nevada	0	1	0	3	3
Pacific States:					
Washington	28	33	7	220	170
Oregon	12	7	7	86	28
California	146	30	12	1,237	354
Total	1,721	891		*14,149	7,047
Median, 1941-45			891	6,792	

*Cumulative total changed by corrected reports

CORRECTION

Aplastic Anemia and Agranulocytosis Following Tridione.—In Mackay and Gottstein's article (THE JOURNAL, September 7) the electroencephalogram reproduced as figure 1 was taken in June 1945. Near the foot of the second column of page 14 the second sentence from the end should read "In addition, six liver and iron capsules (Lextron) and 45 cc. of liver extract were given daily by mouth and 2 cc. of liver extract was given intramuscularly daily."

Marriages

PHILIP D. ZULICK, Abington, Pa., to Mrs. Catherine Wall Bunn of Enfield, N. C., in Rocky Mount, N. C., June 29.

WILLIAM JAMES MCDERMID, Niagara Falls, N. Y., to Miss Mary Elizabeth Harmon of Burt in Lockport, July 27.

JOHN HOWARD POWERS, Cooperstown, N. Y., to Mrs. Emilie Baldwin Simmons of Cherry Valley, June 28.

REYNOLD M. NESEMANN, Kewaunee, Wis., to Miss Jean Malczewski of Pulaski, June 29.

GEORGE A. PODA, Jamestown, N. Y., to Miss Anna Michele of Philadelphia, July 7.

Deaths

Arthur Emanuel Hertzler ✦ widely known for his book "The Horse and Buggy Doctor," published in 1938, died September 12 in the Halstead Hospital, Halstead, Kan., which he founded in 1902, aged 76. Death was due to uremia.

Dr. Hertzler was born in West Point, Iowa, July 26, 1870. After attending the Academy in West Point and Southwestern College, Winfield, Kan., from which he received the degree of bachelor of science, he received the A.M. and Ph.D. degrees from Illinois Wesleyan College. He attended Northwestern University Medical School and received the M.D. degree in 1894. Dr. Hertzler did postgraduate work in Berlin from 1899 to 1901, studying with Virchow and Waldeyer. Later he received the honorary LL.D. from Washburn College, Topeka, and from Southwestern College, Winfield, Kan., D.Sc. from Boston University, and Litt.D. from Bethel College, Newton, Kan. He was a fellow of the American Medical Association, the American College of Surgeons and of the American College of Anesthetists, president in 1911 of the American Microscopical Association and a member of the founders' group of the American Board of Surgery.

Following his return from Germany he taught pathology from 1902 to 1907 and was surgeon and gynecologist from 1907 to 1909 at the University Medical College of Kansas City, Mo. In 1909 he became professor of surgery at the University of Kansas School of Medicine. In 1902 he founded the Halstead Hospital and Clinic at Halstead, Kan., where for many years he practiced surgery and wrote innumerable books both for the medical profession and for the public which attracted nationwide attention. His early writings included a "Laboratory Manual of Histology" and a "Treatise on Tumors." His book "Surgical Operations with Local Anesthesia," published in 1913, was the first textbook in English on this subject. It passed through numerous editions. In 1919 he published a two volume book on "The Peritoneum" and in 1922 an important book on "Diseases of the Thyroid Gland." He also contributed a series of monographs on surgical pathology.

In 1938 he wrote "The Horse and Buggy Doctor," which has become a minor classic and has passed through some forty-five editions, including printings in England and in Sweden as well as many popular priced editions. Subsequent supplementary books failed, however, to get the circulation or the prestige of this widely known work. During the course of Dr. Hertzler's teaching he collected an extensive library and gave 8,000 volumes to the University of Kansas medical library in 1921 and 9,000 volumes to the University of Illinois College of Medicine in 1937. His reading was omnivorous.

Dr. Hertzler developed a slightly satirical, rural philosopher type of speech which made him widely sought by both medical and popular organizations. He championed the general practitioner and opposed some of the efforts to standardize medical education on a higher plane, feeling that the preliminary education had become too complicated and extensive. He was an individualist in all his activities.

Hyman Ischia Spector ✦ St. Louis; University of Illinois College of Medicine, Chicago, 1922; born in Kiev, Russia, July 15, 1894; associate professor of internal medicine at the St. Louis University School of Medicine, where he had been assistant in internal medicine, instructor and senior instructor; specialist certified by the American Board of Internal Medicine; past president of the Mississippi Valley Conference on Tuberculosis; fellow and chairman of the board of examiners of the American College of Chest Physicians; fellow and regent of the American College of Physicians; served as vice president of the St. Louis Tuberculosis Society, chairman of the committee on industrial health of the Missouri State Medical Association and on the committee for health and public instruction of the St. Louis Medical Society; formerly tuberculosis controller and assistant health commissioner for the city of St. Louis; chief of the medical section, St. Louis Health Department, from 1934 to 1943; at various times affiliated with Firmin Desloge Hospital, Mount St. Rose Tuberculosis Sanatorium, St. Mary's Hospital, Koch Hospital, Jewish Hospital and chest consultant to the U. S. Marine Hospital in Kirkwood, Mo.; died July 6 in Laramie, Wyo., on a train returning from the annual session of the American Medical Association at San Francisco, aged 51, of myocarditis.

Joseph Marie Louis Bruno ✦ Brooklyn; Long Island College Hospital, Brooklyn, 1917; specialist certified by the American Board of Ophthalmology; member of the American Academy of Ophthalmology and Otolaryngology and the American Broncho-Esophagological Association; fellow of the American College of Surgeons; served during World War I; recently received a government citation for his work on the Selective Service Board during World War II; on the staffs of St. Catherine's Hospital and the Brooklyn Eye and Ear Hospital; died July 14, aged 52.

Maury Anderson, Dunbar, W. Va.; University of the South Medical Department, Sewanee, Tenn., 1901; member of the American Medical Association; served during World War I; died in a hosiptal at Charleston July 5, aged 72, of heart disease.

William Franklin Ball, St. Louis; Washington University School of Medicine, St. Louis, 1897; served during World War I; died June 29, aged 72, of chronic myocarditis.

Robert Ivan Baxmeier ✦ Pittsburgh; Hahnemann Medical College and Hospital of Philadelphia, 1930; specialist certified by the American Board of Internal Medicine; head of the department of gastroenterology at the Shadyside Hospital; died June 27, aged 42, of coronary thrombosis.

Raymond Emil Bechtel, Chicago; Northwestern University Medical School, Chicago, 1908; died July 5, aged 60, of pulmonary tuberculosis.

Walker Worth Beesley, Tulsa, Okla.; Barnes Medical College, St. Louis, 1907; honorary member of the Oklahoma State Medical Association; member of the American Medical Association; served as county physician; died June 29, aged 66.

Matthew John Beistel, Los Angeles; George Washington University School of Medicine, Washington, D. C., 1907; died June 28, aged 64.

Albert Mortimer Bell ✦ Sea Cliff, N. Y.; Cornell University Medical College, New York, 1908; past president of the Nassau County Medical Society; served as vice president of the Nassau County Obstetrical Society; for many years chief obstetrician of the North Country Community Hospital in Glen Cove; chairman of the medical board of the Nassau County Tuberculosis Sanatorium in Farmingdale, where he died July 19, aged 60, of coronary occlusion.

Frank Ellsworth Blaisdell Sr., San Francisco; Cooper Medical College, San Francisco, 1889; professor of surgery emeritus at the Stanford University School of Medicine; at one time instructor in anatomy at his alma mater; honorary member of the California Academy of Science and the American Association of Anatomists; died July 6, aged 84, of coronary thrombosis.

George W. Bowman, Alsey, Ill.; American Medical College, St. Louis, 1880; died August 13, aged 88.

Franz Henry Brandt, Los Angeles; Northwestern University Medical School, Chicago, 1901; member of the American Medical Association; specialist certified by the American Board of Otolaryngology; fellow of the American College of Surgeons; served on the staff of the Hospital of the Good Samaritan; died in the Huntington Memorial Hospital, Pasadena, July 4, aged 73, of cirrhosis of the liver.

Ray Brown ✦ Columbus, Ohio; Ohio State University College of Medicine, Columbus, 1930; served during World War I and as selective service examiner during World War II; on the courtesy staff of the University Hospital, where he died July 11, aged 50, of a skull fracture and contusion of the brain.

James William Brownlie, Vallejo, Calif.; Cooper Medical College, San Francisco, 1908; member of the American Medical Association; served as county physician for many years; died in the Stanford University Hospital, San Francisco, June 26, aged 62, of pneumonia.

Joseph Austin Champion, Colton, Calif.; Medical College of Ohio, Cincinnati, 1888; an affiliate Fellow of the American Medical Association; died May 22, aged 82.

Philip Stanley Chancellor, Santa Barbara, Calif.; College of Physicians and Surgeons, Baltimore, 1901; served with the British and American armies during World War I; died July 11, aged 71, of hemorrhage from an aortic aneurysm.

Archibald J. Chisholm ✦ Denver; University Medical College of Kansas City, Mo., 1906; assistant professor of surgery (proctology) at the University of Colorado School of Medicine; member of the American Proctologic Society; fellow of the American College of Surgeons; member of the staffs of the Denver General, Colorado General, Mercy and National Jewish hospitals; died July 9, aged 67.

Willard Cottrell, Asbury Park, N. J.; New York Homeopathic Medical College and Hospital, 1905; served during World War I; died July 24, aged 68, of coronary occlusion.

Edwin Irving Cronk, New Brunswick, N. J.; Hahnemann Medical College and Hospital of Philadelphia, 1900; member of the American Medical Association; medical director for the Middlesex County Draft Board during World War I;

health officer of New Brunswick; medical inspector for the public schools; on the staffs of St. Peter's General Hospital and the Middlesex General Hospital; died July 20, aged 69, of cardiac failure.

Benjamin Paul Davies, Palo Alto, Calif.; University of Kansas School of Medicine, Kansas City, 1931; member of the American Medical Association; formerly team physician of the Stanford University Indians; died July 9, aged 40.

Thomas Jefferson Davis, Manning, S. C.; College of Physicians and Surgeons, Baltimore, 1898; died in the McLeod Infirmary, Florence, July 20, aged 73, of tuberculosis.

Dudley Brainard Deming ✠ Waterbury, Conn.; Columbia University College of Physicians and Surgeons, New York, 1901; fellow of the American College of Surgeons; served as a major in the medical corps of the Connecticut National Guard; on the staff of the Waterbury Hospital; died July 7, aged 71, of coronary thrombosis.

Michael A. Richard DeVita ✠ Buffalo; University of Buffalo School of Medicine, 1917; served overseas during World War I; died July 8, aged 53, of coronary occlusion.

James L. Dibrell ✠ Little Rock, Ark.; University of Arkansas School of Medicine, Little Rock, 1904; died in St. Vincent's Infirmary July 2, aged 66.

Ridley Herman Draper ✠ Bremen, Ind.; University of Nashville (Tenn.) Medical Department, 1904; died in St. Augustine, Fla., July 19, aged 63, of heart disease.

Louis Dysart, Phoenix, Ariz.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1895; died July 9, aged 75.

Herman H. Farkas ✠ York, Pa.; Baltimore Medical College, 1911; died May 3, aged 56, of coronary occlusion, arteriosclerosis and cerebral hemorrhage.

Charles Henry Ferguson, Thomasville, Ga.; University of Georgia Medical Department, Augusta, 1901; member of the American Medical Association; died June 2, aged 78.

Arthur Alexander Finch, Pasadena, Calif.; Hahnemann Hospital College of San Francisco, 1892; member of the American Medical Association; died June 9, aged 74.

Frank F. Frantz, Lancaster, Pa.; Jefferson Medical College of Philadelphia, 1869; Hahnemann Medical College and Hospital of Philadelphia, 1875; died July 1, aged 99, of hypostatic pneumonia.

John Augusta Gaines, Tampa, Fla.; Vanderbilt University School of Medicine, Nashville, Tenn., 1896; died July 18, aged 81, of myocarditis.

Lars Andreas Garness, Chicago; Chicago College of Medicine and Surgery, 1916; member of the American Medical Association; served as chief pathologist at the St. Elizabeth Hospital and president of medical staff of the Norwegian-American Hospital; died July 14, aged 62, of chronic myocarditis, hypertension and diabetes mellitus.

Louis Joseph Gay, Chicago; Loyola University School of Medicine, Chicago, 1922; member of the American Medical Association; served during World War I; on the staff of St. Elizabeth Hospital; died in St. Mary's Hospital, Rhinelander, Wis., July 24, aged 55, of heart disease.

Charles Willard Geiger ✠ Kankakee, Ill.; Chicago Homeopathic Medical College, 1896; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1904; member of the American Academy of Opthalmology and Otolaryngology; past president of the Kankakee County Medical Society; died July 19, aged 75, of intestinal obstruction.

Samuel Anthony Geraci, Chicago; Loyola University School of Medicine, Chicago, 1927; died July 26, aged 47, of coronary occlusion.

Goodwin Gheesling ✠ Greensboro, Ga.; Atlanta College of Physicians and Surgeons, 1912; served as chairman of the Greene County Health Department; died in Canada, June 21, aged 56, of coronary occlusion.

Charles Fortune Gold, Rutherfordton, N. C.; University of North Carolina School of Medicine, 1910; member of the American Medical Association; honorary member of the Medical Society of the State of North Carolina; county physician for many years; died in the Rutherford Hospital June 30, aged 61.

Harry Goldstein, Spokane, Wash.; Jefferson Medical College of Philadelphia, 1916; member of the American Medical Association; served during World War I; on the staffs of the Deaconess, Sacred Heart and St. Luke's hospitals; died in Medical Lake June 28, aged 56.

Floyd Leland Grandstaff, Decatur, Ind.; Indiana University School of Medicine, Indianapolis, 1928; interned at the Indiana University Hospital in Indianapolis and served a residency at the Santa Barbara Cottage Hospital in Santa Barbara; member of the American Medical Association; past president of the Adams County Medical Society; formerly health officer of Adams County; served during World War II; died May 11, aged 40, of lung abscess.

Robert M. Gray, Curryville, Ga.; University of Georgia Medical Department, Augusta, 1887; died June 27, aged 81, of carcinoma of the stomach.

Henry Burton Grimes ✠ Madelia, Minn.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1903; for many years secretary of the Watonwan County Medical Society; a captain in the medical corps of the U. S. Army during World War I; major, medical reserve corps, not on active duty; at one time mayor of Madelia; on the staff of the Madelia Hospital; died July 18, aged 68, of coronary occlusion.

Franklin Hazlehurst, Baltimore; Johns Hopkins University School of Medicine, Baltimore, 1907; at various times visiting surgeon to the Church Home and Infirmary and St. Agnes' Hospital; died June 24, aged 63.

William Frederick Hebsacker, Philadelphia; Jefferson Medical College of Philadelphia, 1899; member of the American Medical Association; served during World War I; died April 23, aged 77, of myocarditis, cardiorenal disease and arteriosclerosis.

Ralph Theodore Justen, Milwaukee; Marquette University School of Medicine, Milwaukee, 1941; a captain in the medical corps, Army of the United States, serving in a medical detachment of the thirty-third division in this country and Hawaii and with the 22d Station Hospital in Hawaii during World War II; overseas for two years; interned at the Columbia Hospital, where he died June 16, aged 32, of carcinoma of the stomach and lung.

Amzi Peter Kannapel ✠ Peoria, Ill.; University of Louisville (Ky.) Medical Department, 1913; past president of the Peoria City Medical Society and the staff of the Methodist Hospital; served as editor of the *Peoria Medical News;* died June 20, aged 66, of coronary occlusion and arteriosclerosis.

William Dennis Keating, Denver; Northwestern University Medical School, Chicago, 1905; member of the American Medical Association; died in June, aged 70.

Forrest Vaughan Keeling, Elsberry, Mo.; Keokuk (Iowa) Medical College, College of Physicians and Surgeons, 1903; member of the American Medical Association; for many years president of the board of education; served as mayor; a medical officer in the U. S. Army during World War I; died June 29, aged 66, of cerebral hemorrhage.

Edwin Rudolph Kluss ✠ Santa Barbara, Calif.; University of Michigan Medical School, Ann Arbor, 1931; interned at the St. Francis Hospital; died May 5, aged 42, of skull fracture and laceration of the brain.

D. Frank Knotts, Bloomington, Ill.; Harvey Medical College, Chicago, 1902; died in a hospital in Peoria June 24, aged 75.

Hiram Lawrence Koehler, Polson, Mont.; Bennett Medical College, Chicago, 1912; member of the American Medical Association; served during World War I; affiliated with the Northern Pacific Hospital, Missoula, where he died June 8, aged 57, of coronary thrombosis.

William J. Laval, Evansville, Ind.; Medical College of Evansville, 1882; member of the American Medical Association; for many years director of the Citizens' National Bank; died June 27, aged 85.

William Clark Lawrence, Detroit; Detroit College of Medicine, 1904; member of the American Medical Association; on the staff of the Harper Hospital; died while at Walloon Lake June 30, aged 66, of coronary thrombosis.

Elijah Clements Leach, Arlington, Wash.; Jefferson Medical College of Philadelphia, 1914; member of the American Medical Association; past president of the Snohomish County Medical Society; for many years member of the school board; died July 3, aged 61, of coronary thrombosis.

Lewis Brucker McCullough, Mansfield, Ohio; Creighton University School of Medicine, Omaha, 1936; member of the American Medical Association; interned at St. Joseph Mercy Hospital in Sioux City, Iowa; vice president of the Richland County Medical Society, of which he had been secretary; for many years county coroner; served during World War II; died June 21, aged 40.

John T. McLain, Gurdon, Ark.; Memphis (Tenn.) Hospital Medical College, 1912; member of the American Medical Association; died in Little Rock June 20, aged 66, of cholangitis and hepatitis.

Robert J. McLaughlin, Rock Island, Ill.; Jefferson Medical College of Philadelphia, 1885; died in the Moline Public Hospital, Moline, July 3, aged 86.

John Wesley Moore, Flint, Mich.; Detroit College of Medicine and Surgery, 1917; member of the American Medical Association; died in the Hurley Hospital June 17, aged 54, of coronary occlusion.

Henry Wilson Morrow ✦ Swissvale, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1901; director of the First National Bank of Swissvale; on the staffs of the Braddock (Pa.) Hospital and the Columbia Hospital in Wilkinsburg, where he died July 19, aged 69, of cholecystitis and cholelithiasis.

Jack Veness Newman, Portland, Ore.; University of Oregon Medical School, Portland, 1941; interned at the University of Oregon Medical School Hospitals and Clinics, where he served a residency; served during World War II; died in the Multnomah Hospital June 20, aged 29, of cerebral hemorrhage.

Irving Usher Parsons, Malvern, Iowa; Bellevue Hospital Medical College, New York, 1893; member of the American Medical Association; served as city health officer and on the school board; died in Omaha June 23, aged 79, of cerebral thrombosis and arteriosclerosis.

John Gennaro Penza, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1910; member of the American Medical Association; an officer in the medical corps of the U. S. Navy during World War I; on the staff of St. Agnes Hospital; died July 18, aged 58.

Carl Popper, Chicago; Medizinische Fakultät der Universität Wien, Vienna, Austria, 1892; interned at the Michael Reese Hospital; member of the staff of the Chicago State Hospital; died July 14, aged 79, of carcinoma of the stomach and hypertensive heart disease.

George Seth Porter, Williamsport, Ind.; Illinois Medical College, Chicago, 1901; member of the American Medical Association; honorary member of the Indiana State Medical Association; vice president and a director of the Citizens State Bank; died June 27, aged 75.

James Spencer Purdy, Everett, Wash.; Bellevue Hospital Medical College, New York, 1898; member of the American Medical Association; formerly associated with the U. S. Public Health Service; served overseas during World War I; died in the General Hospital June 28, aged 72, of coronary thrombosis.

Thomas Freeman Quinby, Minneapolis; College of Physicians and Surgeons, medical department of Columbia College, New York, 1878; member of the American Medical Association; past president of the Hennepin County Medical Society; served as city health inspector and for many years member and president of the board of education; died June 30, aged 91, of senility.

Harry Patton Reid, Legion, Texas; Medical Department of Tulane University of Louisiana, New Orleans, 1903; member of the American College of Chest Physicians; served with the U. S. Public Health Service and on the staff of the Veterans Administration Facility; died June 29, aged 65, of coronary occlusion.

Rhody William Rice ✦ Stevens Point, Wis.; Marquette University School of Medicine, Milwaukee, 1926; fellow of the American College of Surgeons; on the staff of St. Michael's Hospital; died in the Wisconsin General Hospital, Madison, June 26, aged 45, of coronary occlusion.

William Wordsworth Riha, Bayonne, N. J.; University of Maryland School of Medicine, Baltimore, 1905; on the staff of the Bayonne Hospital; physician in the public schools; died June 30, aged 63, of abdominal abscess, probably secondary to carcinoma of the descending colon.

James Allen Robinson, Cincinnati, Ark.; University of Tennessee Medical Department, Nashville, 1894; member of the American Medical Association; honorary member of the Arkansas Medical Society; died June 16, aged 78.

Stratis George Roccas, Jackson Heights, N. Y.; Tufts College Medical School, Boston, 1926; on the staff of the Gouverneur Hospital in New York; died July 10, aged 48, of chronic nephritis, hypertension and uremia.

Guiseppe Romano, Congress Park, Ill.; Bennett Medical College, Chicago, 1912; member of the American Medical Association; died June 30, aged 70.

Julius Rotteck, St. Louis; Homeopathic Medical College of Missouri, St. Louis, 1904; member of the American Medical Association; died June 15, aged 65, of carcinoma of the spleen.

Michael John Ruddy, Paterson, N. J.; New York Medical College, Flower and Fifth Avenue Hospitals, 1945; died in the Valley View Sanatorium June 29, aged 30, of pulmonary tuberculosis.

J. V. Satterfield, Little Rock, Ark.; Medical Department of Tulane University of Louisiana, New Orleans, 1900; died June 16, aged 72, of cerebral arteriosclerosis, duodenal ulcer and malnutrition.

Frederick M. Schmidt, Eagle, Wis.; Wisconsin College of Physicians and Surgeons, Milwaukee, 1911; member of the American Medical Association; for many years school clerk; on the staff of the Waukesha Memorial Hospital in Waukesha, where he died June 10, aged 58, of myocarditis.

Parry Mason Scott ✦ Beverly, N. J.; Jefferson Medical College of Philadelphia, 1924; on the staffs of the Burlington County Hospital in Mount Holly and the Zurbrugg Memorial Hospital in Riverside; died in Bordentown, July 11, aged 46, of cerebral hemorrhage.

John B. Shipley, Hudson, Ind.; Curtis Physio-Medical Institute, Marion, 1895; died July 14, aged 83, of heart disease.

Edwin L. Sigmon, Galena, Ind.; Kentucky School of Medicine, Louisville, 1886; honorary member of the Indiana State Medical Association; member of the American Medical Association; member of the staff of St. Edward's Hospital in New Albany, where he died June 20, aged 80, of prostatic hypertrophy and terminal nephritis.

Henry Devon Smith ✦ East St. Louis, Ill.; Barnes Medical College, St. Louis, 1898; died July 7, aged 74.

Louis Marshall Smith, Russellville, Ark.; Vanderbilt University School of Medicine, Nashville, 1928; member of the American Medical Association; associated with St. Mary's Hospital; died in Little Rock, June 5, aged 42, of cirrhosis of the liver.

James Harry Steele, Wagon Mound, N. M.; Kentucky School of Medicine, Louisville, 1900; died July 6, aged 73.

Marshall Kemble Steele ✦ Quarryville, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1918; school board director and school examiner; died June 21, aged 63, of coronary occlusion.

Bert Landon Stinson ✦ Homer, La.; Rush Medical College, Chicago, 1901; health unit director of Claiborne Parish; died July 8, aged 76, of hemorrhage from the descending aorta.

Robert V. Sweet, Rochester, N. H.; New York Homeopathic Medical College and Hospital, New York, 1888; served as mayor of Rochester; died June 15, aged 81.

Samuel Wakefield Swigart ✦ Lewistown, Pa.; Illinois Medical College, Chicago, 1906; served as president of the Mifflin County Medical Society; chief of the obstetric staff of the Lewistown Hospital; died June 5, aged 68, of pulmonary edema and myocarditis.

Alfred H. Taylor, Washington, D. C.; Southern Homeopathic Medical College, Baltimore, 1895; died June 30, aged 87, of coronary thrombosis.

Joseph Napoleon Tessier, New Bedford, Mass.; School of Medicine and Surgery of Montreal, Que., Canada, 1909; died June 16, aged 60, of diabetes mellitus.

Raymond Perle Thornhill, Durham, N. C.; Duke University School of Medicine, Durham, 1941; diplomate of the National Board of Medical Examiners; interned at the Swedish Hospital in Seattle; an assistant resident in pediatrics at the Duke Hospital; served during World War II and was awarded five battle stars and one invasion arrowhead; died in Smithfield June 22, aged 31, in an automobile accident.

Bird Allen Tracy, Hudson, Ind.; Baltimore University School of Medicine, 1891; died April 7, aged 80, of cerebral hemorrhage.

George Herbert Vann, Bellaire, N. Y.; Eclectic Medical College, Cincinnati, 1924; died in the Memorial Hospital, Jamaica, June 26, aged 55, of cerebral hemorrhage.

Frederick Thomas Van Urk, Riegelsville, Pa.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1896; member of the American Medical Association and the Medical Society of New Jersey; served overseas during World War I; died June 24, aged 74.

Dryden Lamar Walker, Meridian, Miss.; University of Alabama School of Medicine, 1908; served during the Spanish-American War and World War I; died in Riley's Hospital July 8, aged 70.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Aug. 17, 1946.

Medicine in Transition

The recently elected president of the British Medical Association, Sir Hugh Lett, consultant surgeon to the London Hospital, reviewed in a timely address the achievements of medicine in the war and the present critical position of the profession. He pointed out that preventive inoculation and the chlorination of water supplies almost eliminated typhoid, which was a scourge in the previous South African war. Under sulfonamides the mortality of cerebrospinal meningitis fell from the 50 to 70 per cent of the previous great war to 10 per cent in this war and in some outbreaks to as low as 4 per cent. In the campaign of Southeast Asia the prevention and control of tropical diseases reached such a high level that Admiral Lord Louis Mountbatten was able to choose deliberately unhealthful areas, to the discomfiture of the Japanese, who had no remedy against them.

In these critical days, said Sir Hugh, the increasing cooperation of the Royal Colleges with the British Medical Association must give satisfaction to those who look ahead and see the dangers that may arise from state control over the profession in its care of the sick. The high standard of British medicine and its prestige was due in no small measure to the freedom the profession had heretofore enjoyed—a freedom unfettered by the trammels, the frustrations and the infinite delays of bureaucracy and, above all, a freedom untouched by the ebb and flow of politics. The care of the sick was an art as well as a science. Medicine was not a plumbing job or as simple as building houses. Men and women were not robots but sentient beings varying in their constitution and response to different forms of treatment. If we are to maintain our ideals and to continue to regard our patients as individuals and not merely as cases and types of disease and to preserve the confidential relationship between doctor and patient, the freedom of the profession in clinical matters must be preserved. Research must be encouraged as a rare and delicate plant which flourished only in an atmosphere of freedom.

Now that medicine had been dragged into the turbulent sea of politics, continued Sir Hugh, the future was obscure. Steeped in our great traditions, some of us might feel that we could afford to smile at the little minds and loud voices that decry and accuse us of being self-seeking obstructionists. But constant vigilance will be necessary, and for this reason the happy cooperation between the British Medical Association and the Royal Colleges should be permanent and not be allowed to lapse when the immediate emergency has passed. Only by working together, consolidating the profession and making it as strong as possible can we protect the sick and maintain the proud position of British medicine, with all those things, tangible and intangible, for which it stands.

Increase in Number of Venereal Diseases

An increase in the number of cases of venereal diseases was the principal exception to the better health of the civilian population recorded during the war. The Ministry of Health reports that 10,706 new cases of syphilis were treated in 1935 at the clinics of the local authorities in England and Wales. This was 1,388 more than in 1944 and more than double the prewar total. During the war the annual rate rose steadily from 4,986 in 1929 to 9,642 in 1943. In 1944 there was a slight improvement, when the figure was 9,318. But the 1945 total is the highest for at least fourteen years. The campaign of public education on the venereal diseases, begun in 1942 by advertisements in the press, posters, films and exhibitions, is to be continued.

The Highest Birth Rate for Twenty-One Years

Concern for the future of our population because the birth rate is not sufficient for maintenance should be eased by the figure for the June quarter, which showed a birth rate of 19.2 per thousand of population, the highest for twenty-one years. The number of births was 203,797, while the number of deaths was 114,070, which is 10.7 per thousand of population. These figures of a birth rate nearly twice the death rate may be considered highly satisfactory and as indicating that the population problem has been solved, but that would be a fallacy. In the first place the rise of the birth rate is probably only a temporary phenomenon due to the war, which for a time abolished unemployment and caused grants to be made to men in the fighting services for wives and children. In the second place the excess of births over deaths of recent years is largely due to increased longevity, which can have only a temporary effect in providing that excess when the birth rate is insufficient for maintenance. An increase of the aged in the population does not help reproduction. It maintains a greater population on a given birth rate but cannot make an insufficient birth rate sufficient. The trend of population cannot be estimated by the crude method of comparison of birth and death rates. It can be estimated only by the valuable new unit introduced for the study of population by Kuczynski: "the net reproduction rate." This expresses the number of women in the next generation who will replace the women of reproductive age in this generation if birth and death rates remain the same. If the net reproductive rate is unity, population exactly reproduces itself; if more than unity, it will increase; if less than unity, it will diminish. The net reproductive rate for England and Wales for 1933 was calculated as only 0.734. The present figure must be better than that, but it cannot have reached unity. Only experience can show what the effect of the family allowances, introduced by the present government, will have on the birth rate.

"Nature Curers" Fail to Obtain Recognition

In the house of Commons a labor member, Mr. House, moved an amendment to the national health service bill to secure that "qualified nature cure practitioners" should be recognized and that patients should be permitted the free and unfettered right to attend a practitioner of their own choice. He had taken up "nature cure" because he lost much time through influenza and minor ailments. In reply the minister of health said that he would not be so indiscreet as to attempt to form a judgment on the merits of one form of therapy as against another. The amendment would place on the executive council in any area the obligation of providing whatever kind of medical attention any citizen might want. That would create an impossible position. If the House was going to place on the minister the responsibility of providing a health service it must accept the obligation at the same time of defining that health service. So far Parliament had decided that the kind of health service which should be provided was that defined in the Medical Acts. But once a doctor had obtained such qualifications as entitled him to be placed on the medical register there was no interference with the kind of treatment he gave. If the group of healers which had been mentioned thought that they had something which was beneficial for mankind, all they had to do was to obtain the necessary medical qualifications, and they could then give any form of treatment they liked. In the debate a medical member, Sir Henry Morris-Jones, said that no responsible minister could accept the amendment. They heard a lot about the success of "the nature curers" and others but little about their failures. An immense amount of harm was done by unorthodox people delaying the necessary treatment. The amendment was negatived.

PARIS

(From Our Regular Correspondent)

Aug. 26, 1946.

New Organization of the Public Health Service

CREATION OF TWO MINISTRIES

The loss of 1,400,000 men sustained by France during the war and the precarious situation with regard to infancy, result of long-continued subnutrition, have posed most urgently the demographic problem. Not only was it necessary to develop a system of protection of infancy; it was also imperative to change the methods of assimilation and naturalization of the aliens. The law of Jan. 19, 1946 has created in the Ministry of Public Health a general direction of population in addition to the general direction of health. Two separate ministries were created: the Ministry of Public Health and the Ministry of Population. In the press conference of the 7th of August the new minister of public health explained the specific functions of these ministries: The Ministry of Public Health is charged with the direction of public hygiene, of social hygiene, of social mutual aid, of the central service of pharmacy and of the National Institute of Hygiene. It will also supervise the French Red Cross. The Ministry of Population retains the direction of population and naturalization, the direction of the family and the protection of infants as well as the office for coordination of the great relief institutions.

REORGANIZATION OF THE LOCAL SERVICE

Through the law published in the *Journal officiel* of June 16 the Ministry of Public Health has effected the decentralization of the local health services. The regional directions are dispensed with and their functions are taken over by the district directions (a region consists of three to four districts). Each district comprises two directions: health and population. To the latter are allotted the functions of the services of relief and those of the protection of families. Other functions of the Direction of the Population are examination of any measure for the promotion of demographic and family policy, the application of the policy of social protection of maternity, infancy and adolescence, the organization of holiday centers and the coordination of all measures which can serve the assimilation of aliens.

EXTENSION OF THE SYSTEM OF PREVENTION

At the same press conference the minister of public health reported the enactment of nine preventive examinations to be made on every citizen up to the age of 60: (1) between 6 and 18 months, (2) between 3 and 4 years, (3) between 6 and 10 years, (4) between 12 and 15 years for boys and between 11 and 14 years for girls, (5) between 19 and 21 years, (6) between 25 and 30 years, (7) between 35 and 40 years, (8) between 45 and 50 years, (9) between 50 and 60 years.

The results of each examination are to be recorded on a special card, which consists of three sheets; one is to be given to the person examined or to his parents if he is under 15 years of age, and to be incorporated in his individual sanitary book; the two other sheets are to be sent to the doctor in charge of the medical control in the district of the local fund. One of the sheets, not bearing the name of the person, is to be sent to the consulting doctor of the National Institute of Hygiene for statistical purposes.

Meeting of the International Union of Therapy

The plenary meeting of the International Union of Therapy will take place in Paris on October 18 and will be presided over by Professor Loeper, a member of the Academy of Medicine. The subjects for discussion will be iron therapy and therapy with aerosols.

Compulsory Medical Examination in Schools of Higher Learning

The medical control of students, which up to now has been compulsory in certain universities only, is extended to all students of the higher schools. Special Services working under the control of the vice chancellors and of the minister of national education are being instituted. The examinations include one tuberculin test and one radiologic examination. Students evading these examinations will be deprived of their right to be entered for their examinations and will forfeit their privilege to apply for a scholarship or a loan.

Preventive Medicine in Sports

The *Journal officiel* of Oct. 7, 1945 and of March 1946 publishes two departmental orders regarding the medical control of sports and of physical activities. A federal sport license can be given only to a holder of a medical certificate confirming his aptitude for sport and for the practice of the particular activity. The state desires the physical and athletic associations to organize medicophysiologic control of all their members with regard to their physical aptitude to practice the sports. Subsidies are provided for meritorious associations.

PALESTINE

(From Our Regular Correspondent)

JERUSALEM, Aug. 21, 1946.

Experimental Cutaneous Leishmaniasis

Studies were made by Dostrovsky on the incubation period in cutaneous leishmaniasis in human volunteers. It could be shown that in the natural infection the period of incubation differed considerably from that observed in experimental infection with living flagellates. In 4 members of the medical staff of the clinic who volunteered for these studies, he tried to establish the reasons for this different behavior. The volunteers received intracutaneous injections of graded quantities of flagellates (16 million, 4 million, 3 million and 2 million, respectively). After twenty-four hours all 4 cases presented a circumscribed patch of redness of the skin at the site of injection, gradually developing into a typical Leishmania lesion with positive microscopic findings. Applications of grenz rays effected complete disappearance of the lesions. In contrast to the natural infection by Phlebotomos for which an incubation period varying between two weeks and several months has been established, the artificial infection showed practically no incubation period at all, probably owing to the remarkable number of flagellates used in the experiments. According to the experimental setup, the number of parasites introduced into the skin was about a thousand times that of the natural infection (about 200 at a time).

A New Arab Medical Journal

When the first number of the *Journal of the Palestine Arab Medical Association* appeared in November 1945, Dr. I. D. George wrote the introductory lines "The *Journal of the Arab Medical Association* is the first Arab medical periodical to be published in Palestine. It is a natural outcome of over a quarter of a century of development and growth of the Arab medical world in the country."

The Arab Medical Association was founded in 1944 by a merging of the various Arab medical associations into one. In July 1945 the first Arab medical conference was held in Jerusalem. At present about 300 members have joined the association. Its activities in 1945 consisted mainly in a health campaign throughout the country, which took the form of public lectures and radio broadcasts by Arab doctors on various common diseases, child welfare, oral hygiene, diet and prophylactic measures to be taken against certain diseases and the value and impor-

tance of vaccination, inoculation and general care and first aid to be given to the sick before medical aid is called in. Five Arab hospitals are planned (in Jerusalem, Gaza, Jaffa, Haifa and Ramallah), but their construction has been delayed by the war.

The first issue of the *Journal* contains, among others, a contribution by Dr. Canaan on "Topographical Studies in Leishmaniasis in Palestine." Canaan concludes that visceral and cutaneous forms of leishmaniasis are found all over Palestine. The cutaneous form is spread all over the country, at times assuming an endemic character, while the visceral infection has never played an important role. It is pointed out that in regard to its local distribution the one form does not coincide with the other. The spread of cutaneous leishmaniasis takes place from the primary center of infection in Jericho as well as from Egyptians who imported the disease, e. g. by the Egyptian Labor Corps in 1918 in the Artouf area or by Jewish immigrants from Persia, Iraq, Turkey and Bokhara.

Studies on Cold Agglutination

At a meeting of the Association of Jewish Physicians in Palestine on January 15, Gurevitch reported the results of cold agglutination studies made during an epidemic of atypical pneumonia which had occurred in March and June in Jerusalem. Twenty-three of the cases were studied for their cold agglutinin content, and 19 of them, 83 per cent, showed positive results. The agglutinin titer was from 1 : 16 to 1 : 512 and the cold agglutinins could be demonstrated in the second week of illness, the titer increasing in the third and fourth weeks. Clinically the cases were usually of a mild character, but there were also a few with persistent high temperature, dyspnea and cyanosis. All patients recovered. Forty-one serums served as negative controls, 12 of them being of patients with bronchopneumonia, a few of rheumatic fever, typhoid, pulmonary tuberculosis or tonsillitis. It should be mentioned that during a similar but more limited epidemic in the winter of 1944 no cold agglutinins could be established in the serums of the patients.

The Toxicity of Emetine

In their studies of glycogen, carried out on rats, Wertheimer and Brueckmann of the pharmacologic section of the Hebrew University investigated the question of what influence is exerted by emetine on the carbohydrate metabolism. Information was desired on a possible liver damage caused by emetine. It was shown that the application of one fatal dose is accompanied by a rapid glycogen fall in the liver while the blood sugar remains unaffected. The sudden drop in the glycogen values of the liver is attributed to a fermentative disturbance, as it is also encountered in shock after trauma and hemorrhage. The repeated administration of small doses, however, has no effect either on the glycogen of the liver or on the muscles. The mortality after emetine administration was higher in hepatectomized rats than in the controls. In these studies it has been confirmed that a protein deficit reduces the resistance to emetine, while, on the other hand, additional protein feeding in a balanced diet by no means intensifies this resistance.

Hemolytic Anemia in Typhoid

Studies on hemolytic anemia in typhoid have been carried out by Berman, Braun and Rachmilevitz during the past two years. The results were reviewed in the *Acta Medica Orientalia* (**4**:175 [June] 1945). While in certain general infections hemolytic anemia is not rare, it has only exceptionally been reported for typhoid. Of 152 clinical cases reported, 9 showed severe hemolytic anemia, and in none of them could hemorrhage or drugs be ascertained as the cause. The anemia was usually of the normocytic and normochromic type with the special feature of distinct reticulocytosis of 10 per cent during the period of fever. As soon as the temperature returned to normal, erythrocytes promptly started rising and so did the hemoglobin rate. The anemia was usually accompanied with hemolytic jaundice (urobilinogen in the urine increased, bilirubin negative, indirect van den Bergh reaction in the serum positive). Bone marrow studies revealed erythroid hyperplasia of between 34 and 66 per cent. No information was obtained as to the mechanism of hemolysis. Since direct destruction of erythrocytes as it occurs in malaria or Bartonella infection is out of the question, the effect of hemolysins was taken into consideration as it is known for streptococcic or Clostridium welchi infection and the degree of anemia. It was pointed out that in cases in which hemolytic anemia developed prior to the onset of typhoid a "dietary deficiency state" such as pellagra or persistent diarrhea had been present.

Conjunctivitis Caused by Virus of Newcastle Disease

In October 1945 in Mikve Israel, a small agricultural settlement, an epidemic of 17 cases of conjunctivitis was reported by J. Yatom. The infection almost exclusively attacked women who had contact with fowl affected by Newcastle disease. No direct spread from man to man was noted, and none of the women infected their husbands.

After an incubation period of three days, swelling developed of the conjunctiva, tarsus and sclera without involving the cornea. After an acute stage of three days' duration characterized by a slightly mucous, purulent secretion the symptoms subsided within ten to fourteen days, with full recovery. In contrast to the conjunctivitis which is endemic in Palestine, the infection was characterized by being confined to one eye and by not involving the cornea.

The epidemic stopped as soon as the affected fowl were slaughtered.

OSLO

(From a Special Correspondent)

Aug. 18, 1946.

At What Age Is Infection with Tuberculosis Most Dangerous?

While it is generally agreed that infection with tubercle bacilli in the first year of life is exceptionally dangerous, there is little reliable evidence to show the comparative danger of such infection at other ages. To throw light on this problem, Dr. Sven Nissen Meyer of Oslo has undertaken a statistical analysis of the observations in this field of various Scandinavian investigators. He assumes that most cases of tuberculosis are due to a primary infection and not to a superinfection. He draws a line between the silent infection manifested by slight and transient radiologic changes and the manifest disease expressing itself in progressive pulmonary tuberculosis. He notes that some observers include erythema nodosum, hilus adenitis and pleuritis among the silent infections. He dates his primary infections from the findings of tuberculin tests. For persons between the ages of 18 and 25 he finds that about 35 per cent show some sign of response to a primary infection but that only about 10 per cent react with progressive disease. In other words, every third person reacts to a primary infection by silent or progressive tuberculosis, and every tenth person develops serious pulmonary tuberculosis. The prognosis is far better for primary infections between the ages of 7 and 12. In this group only about 8 per cent show any reaction whatever to a primary infection beyond tuberculin reactions, and only between 1 and 2 per cent react with progressive pulmonary tuberculosis.

The Too Versatile Chemist

The Norwegian chemist who today sells his customers substitutes for the drugs prescribed by doctors follows a practice which is apparently by no means rare. It is denounced as a nuisance in a recent number of the Journal of the Norwegian Medical Association by Dr. Carl Müller, who is on the senior staff of Ullevaal Hospital in Oslo. With commendable impar-

tiality he cites extenuating circumstances in defense of the peccant chemist and aggravating circumstances for which he blames the prescribing doctor. The latter's careless drafting of his prescriptions often invites abuse. Illegible handwriting gives scope for the imaginative faculties of the chemist, who may be tempted to read into a prescription intentions never in the mind of its author. On behalf of the chemist it should be noted that it was often impossible during the war to provide the drugs prescribed, and what more natural for him than to sell closely related substitutes after the author of a prescription had agreed over the telephone to the chemist's proposed substitution? It is but a step from this course to substitution without consulting the author of a prescription. But what is permissible and even laudable in wartime may become vexatious in normal times, and once the chemist allows himself to stray from the narrow path of pharmaceutical rectitude, confounding the duty of dispensing with the art of prescribing, there is no knowing where his versatility may lead him. One of Dr. Müller's patients had been given a prescription not containing aminopyrine. A chemist had dispensed an aminopyrine-containing substitute, and shortly afterward the patient was admitted to the hospital suffering from agranulocytosis. Another of Dr. Müller's patients, who suffered from cancer of the prostate, had been prescribed an estrogen preparation whose potency was indicated by the cessation of disturbances of micturation and by a sense of tension in the nipples. When these reactions ceased, inquiries showed that the dispensing chemist had sold a substitute without telling the doctor or the patient he had done so. When the original tablets were again taken, the former reactions were again observed.

An Experimental Polyclinic Service

While polyclinics have failed to give general satisfaction in Sweden, a recent experiment in Norway suggests that a satisfactory solution of this problem may have been found. In Sweden the cogs of the wheel have become clogged by a too wholesale utilization of polyclinics open to all and sundry. At a public hospital in Tönsberg, Norway, a polyclinic service was started in August 1943. One of the objects of this service was to ease the pressure on the hospital beds and thus shorten the waiting list for patients who hitherto often had to wait several weeks before admission. To secure admission to the polyclinic, patients had to be recommended by a doctor, and appointments had to be made in advance, each patient being allotted half an hour apart from the time required for various laboratory tests carried out by a nurse. Notes on each case were dictated to a dictaphone or a stenographer. The medical team consisted of the hospital's senior physician and three assistants. Renouncing all right to private practice, the senior physician worked in the polyclinic three days in the week for a salary of 12,000 kroner as a supplement to his ordinary salary of 15,000 kroner. The polyclinic was open on the first five days of each week, the consultations lasting from 11 to 1:30 and the work being completed by 3 o'clock.

Reporting on this experiment, Dr. Anton Jervell, its originator, points out that the expenses of this service in the budget year 1944-1945 were about 35,000 kroner and that the receipts were about 40,500 kroner. Inquiries addressed to the doctors in the neighborhood indicated that on the whole both they and their patients were satisfied with the quality of this new service and with the conditions under which it was worked. It is hoped that, with the approval of the Norwegian Medical Association, this system will be extended to various other public hospitals in the provinces. What augurs well for the future is Dr. Jervell's advocacy of the principle of quality before quantity. It has been suggested in certain quarters that a polyclinic doctor should not attempt to examine more than 4 or 5 new patients on the same day.

BRAZIL

(From Our Regular Correspondent)

São Paulo, Aug. 10, 1946.

Abdominal Pains

Dr. João Montenegro divides abdominal pains, arising from abdominal diseases, into two groups. In the first group are those which are not based on well defined and constant pathologic findings. They lead to the rather meaningless diagnosis of atony or dyskinesia of the gallbladder, chronic appendicitis, painful uterine displacements, mucous colitis, irritable colon, nervous dyspepsia, food allergy, etc., which in Dr. João Montenegro's opinion are in most cases due to the same morbid state. Spontaneous pains in this group are apt to be erratic in the same patient, because they are usually caused by visceral contractions; they are, as a rule, not severe but achy, frequently colicky, of short duration and recurring more often in certain places of the abdomen. Pains elicited by palpation are scattered over the abdomen as isolated spots which grow progressively larger and merge so that finally the whole abdomen is tender but, as a rule, without muscular rigidity.

In the second group are those which come from clearcut pathologic changes such as duodenal ulcer and cholelithiasis. The spontaneous pains are well localized over the diseased organ, are severer, more constant and of longer duration. Well localized over the diseased organ are, too, pain elicited by palpation, but they fade away as palpation gets farther from such organ; they are more often accompanied by muscular rigidity and therefore belong to surgery. Surgery often obtains complete cures in this group of pains.

In a large percentages of cases, the two groups of pains and therefore the two types of disease coexist.

An Antineoplastic Substance

Dr. Juvenal R. Meyer of the Instituto Biologico de São Paulo performed a series of experiments concerning an anticarcinomatous property developed by Czapek-Do x medium in which Penicillium notatum was cultivated. This property was demonstrated in vitro with small pieces of a transplantable tumor of mice. One hundred per cent of tumor pieces from 3 to 5 mm. in diameter treated under ice box temperature by this medium during seventy-two hours failed to develop new tumors when inoculated in susceptible mice, while 100 per cent of control pieces of the same tumors treated with Tyrode solution under the same conditions resulted in tumors after their inoculation. This action was not due to pure culture medium or to penicillin as procured in commercial form. The mediums were 100 per cent active from the tenth to the fifteenth day of culture and partially active two days before or one month after this period. This anticarcinomatous action was maintained after the active mediums were submitted to a temperature of 100 C. during thirty to forty-five minutes.

Intrathoracic Meningocele

Dr. J. M.-Cabello Campos, director of the radiologic department of the Santa Casa de São Paulo, observed 2 cases of intrathoracic meningocele in the right pulmonary field, close to the spine, associated with abnormalities of the skeleton (spina bifida) and deformities of the thorax and of the lung (congenital cyst). In 1 of the cases, besides the abnormalities mentioned there was neurofibromatosis of the skin (Recklinghausen's disease), which, according to recent studies, may also have a congenital origin. The author emphasized the fact of the coexistence of the abnormalities and cutaneous neurofibromatosis, as also happened in the case reported by Dr. Pohl of Berlin (*Roentgenpraxis* **5**:747 [Oct.] 1933).

Intrathoracic meningocele constitutes a rare radiographic discovery and its diagnosis is easy as soon as the possibility of its existence is thought of, according to Dr. Cabello Campos's experience.

Bureau of Investigation

MISBRANDED PRODUCTS

Abstracts of Notices of Judgment Issued by the Food and Drug Administration of the Federal Security Agency

[EDITORIAL NOTE.—These Notices of Judgment are issued under the Food, Drug and Cosmetic Act, and in cases in which they refer to drugs and devices they are designated D.D.N.J. and foods, F.N.J. The abstracts that follow are given in the briefest possible form: (1) the name of the product; (2) the name of the manufacturer, shipper or consigner; (3) the date of shipment; (4) the composition; (5) the reason for the charge of misbranding, and (6) the date of issuance of the Notice of Judgment.]

Allen's Nijara Capsules.—Allen Products Company, Inc., Washington, D. C. Shipped Feb. 24 and March 23, 1943. Composition: dried green stem and leaf material, including in one lot parsley and watercress. Examination showed not more than 5 U. S. P. units of thiamine (about 1/60 of the minimum daily requirement of this) and inconsequential amounts, if any, of ascorbic acid, riboflavin, nicotinic acid and vitamin D. Misbranded because leaflet accompanying package falsely represented that article was effective to soothe pain, give relief from rheumatism, arthritis, neuritis, sciatica, gout, lumbago and sinusitis, and that, when taken as directed, it would supply the bodily need for such important minerals as calcium and phosphorus, and the important vitamins mentioned above, none of which it would do.—[*D. D. N. J., F. D. C. 1081; April 1945.*] Also declared misbranded under provisions of the law applicable to foods, as reported in *F. N. J. 5795.*

Anti-Ur-Acid.—E. R. Davis Prescription Company, Bellingham, Wash. Shipped May 14, 1942. Composition: a powder consisting essentially of magnesium sulfate, potassium bitartrate and sodium bicarbonate. Misbranded because name falsely suggested that product would neutralize and correct excess uric acid, and name and label statements gave false impression that this condition is the cause of rheumatic, neuritic and arthritic pains, gout, dropsy and similar conditions, and that Anti-Ur-Acid is a remedy for these. Further misbranded because label directions intimated that product should be taken every morning, whereas this, a laxative, should not be so frequently used.—[*D. D. N. J., F. D. C. 1058; April 1945.*]

Be Bex.—Oxford Products, Inc., Cleveland. Shipped Dec. 23, 1942. Composition: 330 International units of vitamin B_1 per fluid ounce reported, whereas the amount represented was 660 units. Hence adulterated. Misbranded because of label misrepresentations that Be Bex would help to protect against nerve disorders caused by vitamin deficiency, to prevent, cure or treat retarded growth, constipation, migraine and nutritional anemia, and benefit some other conditions.—[*D. D. N. J., F. D. C. 1106; June 1945.*] Also declared misbranded under provisions of the law applicable to foods.

Chynes.—Watchung Laboratories, Bound Brook, N. J. Shipped Oct. 26 and Dec. 12, 1942. Composition: in each tablet 2 grains of aminopyrine, and dihydroxyquinoline sulfonic acid. Misbranded because (1) label failed to bear common name and amount of each active ingredient; (2) one ingredient, aminopyrine, might produce the serious blood disturbance known as agranulocytosis and hence serious or fatal injury, unless used under adequate and continuous medical supervision; (3) label did not adequately warn against unsafe dosage or methods or duration of administration.—[*D. D. N. J., F. D. C. 1053; April 1945.*]

Cellasin No. 1 Tablets.—American Ferment Company, Buffalo, N. Y. Shipped Oct. 20, 1942. Composition: sodium bicarbonate, dried yeast and unidentified animal tissues, apparently confirming label claim: "Active Ingredients Vitamin B_1, Vitamin B_2 From Dried Whole Yeast Powder, Desiccated Whole Pancreas Substance, Sodium Bicarbonate." Misbranded because labeling falsely represented that product would benefit faulty carbohydrate metabolism, anorexia, obesity, polyneuritis and diabetes, improve intellectual and physical vigor, increase weight and benefit health.—[*D. D. N. J., F. D. C. 1079; April 1945.*]

Dr. Sibbett's Improved Big Six and Original Big Six.—Sibbett Medicine Company, Cleveland. Shipped April 9, 1943. The products were found to be identical in composition, consisting essentially of 227 grains of epsom salt per fluid ounce, with small amounts of ammonium chloride, caffeine citrate, tincture of ferric chloride, and oil of lemon in water. Misbranded because labeling falsely represented that the products contained quinine sulfate, glycerin, a solution of iron (tincture of iron chloride), citric acid, caffeine citrate and oil of lemon in amounts sufficient to constitute active ingredients, and would relieve colds and headaches. Further misbranded because labeling did not warn against continuous use of laxatives, which these are.—[*D. D. N. J., F. D. C. 1105; June 1945.*]

Dwarfies Wheatmix.—Dwarfies Corporation, Council Bluffs, Iowa. Shipped Sept. 30, 1942, and Jan. 29, 1943. Composition not reported. Misbranded because labeling falsely represented that product would make user healthy and energetic, insure proper growth and elimination, and help prevent, cure or treat minor ailments and serious sickness.—[*D. D. N. J., F. D. C. 1119; June 1945.*] Also declared misbranded under provisions of the law applicable to foods.

Einik's Root.—Z. A. Einik Ointment Company, Union City, Conn. Shipped Sept. 9, 1942. Composition: granulated Canadian stone root. Misbranded because label falsely represented product as a tonic for simple debility or asthenia, a solvent for the blood, a treatment for rheumatism, and some other things.—[*D. D. N. J., F. D. C. 1120; June 1945.*]

Einik's Red Ointment.—Z. A. Einik Ointment Company, Union City, Conn. Shipped Sept. 9, 1942. Composition: creosote, capsicum, peppermint oil and methyl salicylate, apparently in a petrolatum base. Misbranded because label falsely represented the product as effective for rheumatic and neuralgic pains, catarrh, tonsillitis and a good many other disorders.—[*D. D. N. J., F. D. C. 1120; June 1945.*]

Formula No. 1520.—J. L. Hopkins and Company, New York. Shipped June 11, 1943. Composition: epsom salt, sulfur, baking soda, and plant drugs, including senna. Misbranded because label did not bear common or usual name of each ingredient, proper directions for use, or adequate warnings against unsafe duration of administration, in that it did not caution that frequent or continued use of a laxative might result in dependence on a laxative to move the bowels.—[*D. D. N. J., F. D. C. 1103; June 1945.*]

Hi-Test Pine Extract.—Oxford Products, Inc., Cleveland. Shipped Dec. 23, 1942. Composition: product had a creosote odor and contained not more than 1.49 minims of chloroform per fluid ounce or 4.36 per cent of alcohol by volume, whereas label falsely declared the amounts of these present. Misbranded for this reason and because the "Pine Extract" designation misleadingly suggested that the product consisted solely of pine extract and derived its therapeutic properties solely therefrom, whereas it possessed two other potent ingredients, chloroform and creosote.—[*D. D. N. J., F. D. C. 1106; June 1945.*] Also declared misbranded under provisions of the law applicable to foods.

Home Brand Cocoa Quinine.—South Georgia Manufacturing Company, Blakeley, Ga. Shipped Nov. 17, 1942. Composition: label claimed 10 grains of quinine sulfate per fluid ounce, whereas specimens examined contained only from 8.5 to 9.72 grains per ounce. Hence adulterated and misbranded. Further misbranded because label did not give adequate directions for use, since it did not specify the dose for children between the ages of one and ten.—[*D. D. N. J., F. D. C. 1055; April 1945.*]

Kovac Type Culture Lactobacillus Acidophilus.—Kovac Laboratories, Los Angeles. Shipped between Oct. 17 and Dec. 3, 1942. Composition: a broth culture containing between 4,000,000 and 8,000,000 lactobacilli per milliliter. Misbranded because accompanying literature falsely represented that article was efficacious in preventing, curing or treating auto-intoxication, toxemia, colitis, ulceration, diabetes, eczema, migraine, depressed mind and other disorders of wide variety.—[*D. D. N. J., F. D. C. 1086; April 1945.*]

Leonardi's Elixir.—S. B. Leonardi and Company, Inc., New Rochelle, N. Y. Shipped April 9, 1943. Composition: essentially water, potassium iodide, tincture of ferric citrochloride and extracts of plant drugs. Misbranded because label falsely represented that product would correct chronic rheumatism, gout or conditions resulting from exposure or exhausting labor, or increase the red corpuscles.—[*D. D. N. J., F. D. C. 1084; April 1945.*]

Natura and Nu-Vita.—Elsie Bleeker, New York. Shipped June 9, 1943. Composition: both products labeled "Contents: Licorice, Sulphur, Cascara Sag., Senna, Bicarb. Soda, Magnesium Sulphate, USP, Sugar." Apparently identical products under different names. Each misbranded because labeling falsely represented it as an "herb powder," effective for low or high blood pressure, rheumatism, backache and swollen feet, and a product of "either Mexico or America." Further misbranded because labels did not give name and address of manufacturer, packer or distributor, or accurately declare quantity of contents, failed to give common or usual name of each active ingredient or adequate directions for use, or sufficiently warn that frequent or continued use of laxatives, which these are, might result in dependence on such a product to move the bowels.—[*D. D. N. J., F. D. C. 1104; June 1945.*]

Orbolene.—Orbolene Company, St. Louis. Shipped Feb. 26, 1943. Composition: essentially water, boric acid, glycerin, carbolic acid, ephedrine and red coloring. Adulterated because below strength and quality represented, namely, as an antiseptic. Misbranded because label falsely represented it as beneficial for weak, inflamed, sticky, sore or irritated eyes and eyelids, or acute and chronic catarrhal conjunctivitis, and because the carbolic and boric acids were not listed on label under their common names.—[*D. D. N. J., F. D. C. 1075; April 1945.*]

Prostacones.—Physicians Drug Company, New York. Shipped April 10, 1943. Composition: essentially methenamine, sodium salicylate, theophyllin and alkaloid-containing material with cocoa butter. Misbranded because labeling falsely represented that product would effectively palliate prostatic distress, soothe inflammation, relax spasm of the vesical sphincter, stimulate diuresis and micturition, reduce urgency, dribbling and burning, obviate infection in catheter cases or check enlargement of the prostate.—[*D. D. N. J., F. D. C. 1085; April 1945.*]

Vitality Vitamins.—Belmont Laboratories, Chicago. Shipped Dec. 31, 1942. Composition: vitamins A, B_1, D and G (B_2) declared on label. Misbranded because falsely represented to prevent or correct colds, retarded growth, loss of weight, eye diseases, intestinal disorders, nervousness and some other things.—[*D. D. N. J., F. D. C. 1080; April 1945.*] Also declared misbranded under provisions of the law applicable to foods, as reported in *F. N. J. 6594.*

Medical Motion Pictures

FILM REVIEWS

Intragastric Drip Therapy for Peptic Ulcer. Directed by Asher Winkelstein, M.D., Mount Sinai Hospital, New York. Color, sound, 1,300 feet, 36 minutes. Produced in 1946 by and procurable from Wyeth, Inc., 1000 Arch Street, Philadelphia 3.

This film well depicts the story of a peptic ulcer, dwelling on the need of accurate and prolonged therapy in the management of patients with peptic ulcer and then stressing the importance and depicting the details of Dr. Winkelstein's method of treatment. The film would be better if the general subject of the management of peptic ulcer were stressed more and the special treatment by drip therapy were emphasized less. The details of the preparation of the film have been carefully developed. The film is in color and from the point of view of the presentation of the subject is excellent. Interior views of the normal dog's stomach are especially well illustrated.

One would hesitate to recommend the film from a professional point of view because of the danger of overemphasis of this form of therapy in the treatment for peptic ulcer. There is undoubtedly a place for this type of treatment in the medical armamentarium of the physician who conducts largely a hospital practice, but the treatment seems quite unsuitable to the care of the average case of peptic ulcer, nor is such elaborate therapy generally considered necessary.

The film would be suitable for presentation before medical societies provided its limitations were stressed, but one doubts the wisdom of presenting this film before medical students as part of the teaching curriculum. For those who are using this form of therapy it would be excellent for presentation before nurses, technicians and other hospital attendants in teaching them the methods employed in this form of therapy.

Gastroscopic Studies in the Diagnosis and Treatment of Gastric Diseases. Color, silent, 575 feet, 23 minutes. Prepared in 1942 by Leo L. Hardt, M.D. Procurable on loan from the author, 30 North Michigan Avenue, Chicago.

The film clearly depicts the subject matter. It describes the uses of gastroscopic methods and instruments used in making gastroscopic examinations, with particular reference to the gastroscope designed by Dr. Hardt. The technic of the passage of the gastroscope is well shown. The need of careful management of the patient before and after gastroscopic examination is emphasized. All the details of the examining physician's activities and the duties of the assistant physician and the nurses are carefully illustrated.

The film is excellent for its teaching value when used by physicians who intend to become experienced in the use of the gastroscope. It would be suitable for showing before medical societies and hospital personnel, such as nurses and such technicians in attendance as are necessary in the management of the patient on whom gastroscopy is to be done. The upper class medical students would gain at least as much information by seeing this film as they do by watching a surgical operation.

Ptosis Operations. Color, silent, 1,050 feet (3 reels), 42 minutes. Prepared in 1945 by Jack S. Guyton, M.D. Procurable on loan from the author at Wilmer Institute, Johns Hopkins Hospital, Baltimore.

This film has teaching value because it shows the steps in surgical technic employed in three different types of operation for ptosis: the Blascovics tarsal shortening operation, the Dickey fascia lata "sling" operation and the Friedenwald operation employing tantalum wire to utilize the frontalis muscle in elevating the lid. The latter is clearly demonstrated by the film, but more liberal descriptive matter or use of animated drawings would have clarified some of the steps in the more complicated technic of the Blascovics and Dickey methods for the benefit of those who have never performed these operations. The color quality of the film is very satisfactory.

The demonstration of postoperative results from all three operations at various intervals offers an excellent means of comparison.

The film is highly recommended for special societies and especially for residents and postgraduate students in ophthalmology.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and the Examining Board in Specialties were published in THE JOURNAL, Sept. 14, Page 104.

BOARDS OF MEDICAL EXAMINERS

ALABAMA: *Examination.* Montgomery, Jan. 21-23. Secretary, State Board of Medical Licenses, B. F. Austin, M.D., 519 Dexter Ave., Montgomery.

ARIZONA: * Phoenix, 1st week in October. Sec., Dr. J. H. Patterson, 826 Security Bldg., Phoenix.

ARKANSAS: * Little Rock, Nov. 7-8. Sec., Medical Board of the Arkansas Medical Society, Dr. L. J. Kosminsky, Texarkana. *Eclectic.* Little Rock, Nov. 7. Sec., Dr. C. H. Young, 1415 Main St., Little Rock.

CALIFORNIA: *Examination.* Sacramento, Oct. 21-24. Secretary, Board of Medical Examiners, Dr. Frederick N. Scatena, 1020 N. Street, Sacramento.

CONNECTICUT: * *Examination.* Hartford, Nov. 12-13. Sec., Dr. Creighton Barker, 258 Church St., New Haven. *Homeopathic.* Derby, Nov. 12-13. Sec., Dr. J. H. Evans, 1488 Chapel St., New Haven.

FLORIDA: * *Examination.* Jacksonville, Nov. 26-27. Sec., Dr. Harold D. Van Schaick, 2736 S.W. 7th Ave., Miami 36.

GEORGIA: Atlanta, Oct. 8-10. Sec., State Examining Boards, Mr. R. C. Coleman, 111 State Capitol, Atlanta 3.

HAWAII: *Examination.* Honolulu, Jan. 13-16. Secretary, Board of Medical Examiners, Dr. S. E. Doolittle, 881 S. Hotel St., Honolulu.

IDAHO: *Examination.* Boise, Jan. 14. Director, Board of Medical Examiners, Mrs. Agnes Barnhart, Room 355, State House, Boise.

ILLINOIS: Chicago, Oct. 15-17. Sec., Dept. of Registration & Education, Mr. Philip Harman, Springfield.

INDIANA: *Examination.* Indianapolis, June. Exec. Secretary, Board of Medical Registration and Examination, Miss Ruth V. Kirk, 627 K. of P. Bldg., Indianapolis.

KANSAS: Kansas City, Dec. 4-5. Secretary, Board of Medical Registration and Examination, J. F. Hassig, M.D., 905 North 7th Street, Kansas City.

KENTUCKY: *Examination.* Louisville, Dec. 16-18. Sec., State Board of Health, Dr. P. E. Blackerby, 620 S. Third St., Louisville 2.

MAINE: Portland, Nov. 12-13. Sec., Board of Registration of Medicine, Dr. A. P. Leighton, 192 State St., Portland.

MARYLAND: *Examination.* Baltimore, Dec. 10-13. Sec., Dr. J. T. O'Mara, 1215 Cathedral St., Baltimore 1. *Homeopathic.* Baltimore, Dec. 10-11. Sec., Dr. J. A. Evans, 612 W. 40th St., Baltimore.

MASSACHUSETTS: *Examination.* Boston, Nov. 19-22. Sec., Board of Registration of Medicine, Dr. H. Q. Gallupe, 413-F State House, Boston 33.

MICHIGAN: * *Examination.* Lansing, Oct. 9-11. Sec., Board of Registration in Medicine, Dr. J. E. McIntyre, 100 W. Allegan St., Lansing 8.

MINNESOTA: * Minneapolis, Oct. 15-17. Sec., Dr. J. F. Du Bois, 230 Lowry Medical Arts Bldg., St. Paul 2.

MISSISSIPPI: *Reciprocity.* Jackson, Dec. Asst. Sec., State Board of Health, Dr. R. N. Whitfield, Jackson 113.

MISSOURI: *Examination.* St. Louis, Oct. 28-30. Dir., Medical Licensure, State Board of Health, Mrs. Lucy Motley, State Capitol Bldg., Jefferson City.

MONTANA: Helena, Sept. 30-Oct. 2. Sec., Dr. O. G. Klein, First Nat'l Bank Bldg., Helena.

NEBRASKA: * *Examination.* Omaha, June 1947. Director, Bureau of Examining Boards, Mr. Oscar F. Humble, State Capitol Building, Lincoln.

NEVADA: *Examination.* Carson City, Nov. 4. Secretary, Board of Medical Examiners, Dr. G. H. Ross, 215 N. Carson St., Carson City.

NEW JERSEY: *Examination.* Trenton, Oct. 15-16. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

NEW MEXICO: * Santa Fe, Oct. 7-8. Sec., Dr. LeGrand Ward, 141 Palace Ave., Santa Fe.

NEW YORK: *Examination.* Albany, Buffalo, New York & Syracuse, Oct. 7-10. Sec., Dr. Jacob L. Lochner, Education Bldg., Albany.

NORTH CAROLINA: *Endorsement.* Asheville, Sept. 30. Act. Sec., Mrs. L. McNeill, 226 Hillsboro St., Raleigh.

NORTH DAKOTA: Grand Forks, Jan. 7-10. Secretary, Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

OHIO: *Examination.* Columbus, Dec. 3-5. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

OREGON: * *Examination.* Portland, Jan. *Reciprocity.* Portland, Oct. 26. Exec. Sec., Miss L. M. Conlee, 608 Failing Blad., Portland 4.

PENNSYLVANIA: *Examination.* Harrisburg, Oct. Act. Sec., Bureau of Professional Licensing, Dept. of Public Instruction, Mrs. M. G. Steiner, 351 Education Bldg., Harrisburg.

RHODE ISLAND: * *Examination.* Providence, Oct. 3-4. Sec., Division of Examiners, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

SOUTH CAROLINA: Columbia, Nov. 11-12. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

SOUTH DAKOTA: * *Examination and Reciprocity.* Vermillion, Jan. 21-22. Secretary, Board of Medical Examiners, Dr. Gilbert Cottam, State Capitol Building, Pierre.

TENNESSEE: * *Examination.* Memphis, Oct. 2-3. Sec., Dr. H. W. Qualls, 130 Madison Ave., Memphis 3.

TEXAS: *Examination.* Oct. 31-Nov. 2. Sec., Dr. T. J. Crowe, 918-20 Texas Bank Bldg., Dallas 2.

VERMONT: *Examination.* Burlington, Jan. 31-Feb. 1. Secretary, Board of Medical Registration, Dr. F. J. Lawliss, Richford.

VIRGINIA: Richmond, Dec. 3-6. Secretary, Board of Medical Examiners, Dr. J. W. Preston, 30½ Franklin Rd., Roanoke.

WASHINGTON: *Examination.* Seattle, Jan., 1947. Secretary, Mr. Nelson Vaughn, Olympia.

WEST VIRGINIA: Charleston, Oct. 7-9. Commissioner, Public Health Council, Dr. J. E. Offner, State Capitol, Charleston 5.

WYOMING: *Examination.* Cheyenne, Oct. 7-8. Sec., Dr. G. M. Anderson, Capitol Bldg., Cheyenne.

---

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

CONNECTICUT: *Examination.* New Haven, Oct. 12. Exec. Asst., State Board of Healing Arts, Mr. W. G. Reynolds, 250 Church St., New Haven.

DISTRICT OF COLUMBIA: *Examination.* Washington, Oct. 21-22. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington.

FLORIDA: *Examination.* Gainesville, Nov. 2. Sec., Dr. J. F. Conn, John B. Stetson Univ., Deland.

IOWA: *Examination.* Des Moines, Oct. 8. Corresponding Sec., Division of Licensure & Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines 19.

MICHIGAN: *Examination.* Ann Arbor, Oct. 11-12. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing.

MINNESOTA: *Examination.* Minneapolis, Oct. 1-2. Sec., Dr. Raymond N. Bieter, 105 Millard Hall, Univ. of Minnesota, Minneapolis 14.

NEBRASKA: *Examination.* Omaha, Oct. 1-2. Dir., Mr. Oscar F. Humble, 1009 State Capitol Bldg., Lincoln 9.

NEW MEXICO: *Examination.* Nov. 3. Sec., Miss Marion M. Rhea, State Capitol, Santa Fe.

OREGON: *Examination.* Portland, Nov. 2. Sec., Mr. C. D. Byrne, Univ. of Oregon, Eugene.

RHODE ISLAND: *Examination.* Providence, Nov. 13. Chief, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

SOUTH DAKOTA: Sioux Falls, Dec. 6-7. Sec., Dr. G. M. Evans, Yankton.

TENNESSEE: *Examination.* Memphis, Sept. 30-Oct. 1. Secretary, Dr. O. W. Hyman, 874 Union Ave., Memphis.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Malpractice: Necrosis Attributed to Overdose of Roentgen Therapy.—The plaintiff filed suit against the defendant physicians, practicing as copartners, for damages alleged to have been caused by the malpractice of one of them, hereinafter referred to as the defendant. From a judgment in favor of the plaintiff, the defendant appealed to the United States Court of Appeals for the District of Columbia.

The plaintiff had a pilonidal cyst at the lower end of his spine over the coccyx about one fifth of an inch in diameter, which erupted like a boil three or four times a year. He consulted the defendant, a specialist in x-ray therapy, who advised roentgen therapy and subsequently administered two series of treatments, one in December 1935 and the other in February 1936. The plaintiff suffered excruciating pain, and the area exposed became reddened, like raw beefsteak, with pus running through the middle, out of the sinus. The defendant prescribed narcotics to relieve pain, and the plaintiff visited the defendant's office almost daily until July 1936. In September the plaintiff consulted a surgeon who, also to relieve pain, injected one side of the affected area with Gabriel's solution. The plaintiff's condition grew progressively worse, however, the skin and tissues in the center of the irradiated area became badly necrosed and began to slough off, and eventually a hole approximately 2 inches in diameter developed.

The plaintiff contended that the cause of his injury was an overdose of roentgen rays. The defendant, on the other hand, contended that there was no overdosage, that the treatment was proper and could not and did not cause the injury, but, rather, that it resulted directly and immediately from the injection of Gabriel's solution. The defendant testified that when he examined the plaintiff in September the ulcer was a "small ulcer, filling in gradually from the bottom" and was getting better and smaller. None of the area surrounding the original ulcer was necrosed. In October, however, the defendant found the plaintiff in "an advanced stage of necrosis." This condition, he said, could not have been due to the x-ray treatments, which, in his opinion and in the opinion of expert witnesses who testified for him, were administered in proper dosage. Furthermore, he said that, if the roentgen rays had been the cause, necrosis would have occurred at one time throughout the entire area irradiated and would have reached its height within ninety days, and the tissue so lost would not have been replaced by growth. There is no conflict as to the fact that the sloughed area at its maximum did not include the whole area exposed and that the lost tissue had been replaced to some extent by scar tissue. The evidence produced by the plaintiff, on the other hand, was to the effect that necrosis and sloughing had commenced before the injection of Gabriel's solution had been made. The surgeon who examined the plaintiff in early September described the condition as "a pilonidal sinus . . . with a whitish edge around the edge of ulceration" and stated that the flesh in the ulcerated area was "swollen, sloughed like . . . had some sloughing—red . . . I would call that necrosis." The surgeons who testified as experts on behalf of the plaintiff refused to state directly that the roentgen treatments caused the necrosis, however.

At the trial the defendant urged that only x-ray specialists were qualified to testify concerning x-ray treatments and their effects. The court said that surgeons are as competent to testify concerning their methods and the effects they produce, generally or in a particular case, as are x-ray men to testify concerning their own, and further that the issue here is not limited merely to the effects of the x-rays but involves equally and alternatively those of the injection of Gabriel's solution. It does not require a knowledge of x-ray therapy to measure the size of an open ulcer, determine whether it is increasing or decreasing, ascertain whether it is necrotic or trophic or estimate the amount of sloughing. The surgeons were at least as fully qualified as the x-ray men also to state the general effects of the use of Gabriel's solution, with which the record shows they were familiar and the x-ray men were not, and to observe and report on the actual effects of the injection. X-ray men are experts in x-ray therapy and its consequences, but, concluded the court, that does not disqualify surgeons, who are also medical experts, from testifying as to matters of common medical knowledge or the use and effects of methods and materials with which their work familiarizes them. The court therefore held that the surgeons were fully as competent as were the defendant and the other x-ray specialists to testify concerning the condition of the cyst, before and after the injection, the characteristics of Gabriel's solution, its consequences, actual and usual, and to observe and state whether such a change as the defendant described took place when he said it did. Their testimony clearly was sufficient to raise doubt in a reasonable mind, lay or legal, as to the correctness of defendant's version of the facts in all the respects concerning which they were in conflict.

The court said that its function was to determine whether the plaintiff's case was strong enough to allow a jury to consider it. Malpractice, said the court, is hard to prove. The physician has all the advantage of position. He is, presumably, an expert. The patient is a layman. The physician knows what is done and what is its significance. The patient may or may not know what is done. He seldom knows its significance. He judges chiefly by results. The physician has the patient in his confidence, disarmed against suspicion. Physicians, like lawyers, are loath to testify that a fellow craftsman has been negligent, especially when he is highly reputable in professional character, as are these defendants. In short, the physician has the advantage of knowledge and of proof. This increases when he is a specialist. What therefore might be slight evidence when there is no such advantage, as in ordinary negligence cases, takes on greater weight in malpractice suits. On the other hand, malpractice is a serious charge. The physician is not an insurer of health. He undertakes only for the standard of skill possessed generally by others practicing in his field, and for the care which they would give in similar circumstances. He must have latitude for play of reasonable judgment, and this includes room for not too obvious or gross errors according to the prevailing practice of his craft. Generally the standard must be shown by experts and so must the departure from it.

The court held that the jury was justified in concluding that the defendants administered an overdose of x-rays and that this was the cause of the necrosis which constituted the plaintiff's injury. In conclusion, it added:

> Unfortunately the case is one in which, as it comes to us, it is necessary to hold that the jury was justified in ignoring important and, in some respects, undisputed testimony. That would have been true, whatever its verdict. None could have been rendered which would not have ignored important, convincing and crucial evidence, given, as we think, by honest and honorable witnesses. It is in just such cases that courts are required to keep hands off the jury's business. We must do so here.

Accordingly the judgment in favor of the plaintiff was affirmed. —*Christie v. Callahan, 124 F. (2d) 825 (Dist. of Col., 1941).*

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1936 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American J. Digestive Diseases, Fort Wayne, Ind.

13:173-212 (June) 1946

*Diet in Uncontrolled Diabetes Preceding Acute Neuropathy. H. F. Root and C. Cruz Mascarenhas.—p. 173.
Fasting Blood Sugar vs. Postprandial Blood Sugar as Observed in Normal Individuals, Medical (Nondiabetic) Patients and Patients with Diabetes. A. Sindoni Jr.—p. 178.
Sudden and Drastic Changes of Carbohydrate Tolerance in Severe Insulin Treated Diabetes. A. Galambos and Wilhelmina Mittelmann-Galambos.—p. 193.
Control of Diarrhea by Tomato Pomace. L. M. Morrison.—p. 196.
Experiences in Nonspecific Diarrheal Conditions in European Theater of Operations. W. J. Hanes.—p. 199.

Diet in Uncontrolled Diabetes Preceding Neuropathy.—Root and Mascarenhas report 2 cases which demonstrate the relationship between carbohydrate utilization and vitamin intake and the nature of the pathologic chemical and anatomic changes found in diabetic neuropathy. Diets excessive in calories and vitamins were taken during the period preceding onset of acute diabetic neuropathy in 1 case, and in a second case with relapse which followed failure to continue treatment with diet and insulin. In uncontrolled diabetes the total caloric intake may be greatly in excess of utilization. In such cases, if the diabetes is mild, ketosis may not occur for a long period. Hyperglycemia, loss of weight and severe neuropathy may result even though the intake of vitamins is large. The findings in the cerebrospinal fluid in diabetic neuropathy, including an increase in total protein, absence of cellular inflammatory reaction and a change in the colloidal gold test, strongly indicate that the central nervous system is the chief site of the lesion in diabetic neuropathy. The failure to obtain prompt improvement is usually due to the fact that diabetic treatment has been begun too late, sometimes even after irreversible changes have occurred.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

55:675-808 (June) 1946

Use of Laminagraphy with Encephalography in Diagnosis of Midline and Subtentorial Brain Tumors. B. S. Epstein and L. M. Davidoff.—p. 675.
*Opaque Myelography in Penetrating Wounds of Spinal Canal. C. L. Hinkel and R. L. Nichols.—p. 689.
Subdural Pneumography. C. Howard.—p. 710.
Osteochondritis Dissecans of Supratrochlear Septum of Humerus. H. H. Lerner, M. B. Watkins and B. Resnick.—p. 717.
Influence of Position on Measurement of Projected Bone Angle. E. W. Klinefelter.—p. 722.
Megaduodenum Secondary to Intrinsic Duodenal Diaphragm: Report of Case. V. Drucker and E. S. Cohen.—p. 726.
Diverticulum of Cardia of Stomach: Report of 3 Cases. B. Resnick.—p. 730.
Osteoradionecrosis of Mandible. E. A. Lawrence.—p. 733.
Leukosarcoma. F. B. Bogart.—p. 743.
Roentgen Therapy for Malignant Teratoma of Testis. R. J. Scheetz and E. T. Leddy.—p. 754.

Penetrating Wounds of Spinal Canal.—Hinkel and Nichols report 13 cases of penetrating wounds of the spinal canal in soldiers who were operated on after myelograms were made. With the patient rolled to the prone position, 6 cc. of pantopaque is used as the contrast medium. Even though the point of entry, the missile tract through the neural canal and the exit wound frequently suggested transection of the cord or cauda equina, this was found in only 2 of the authors' cases. Extradural abscesses, hematomas, displaced bone fragments and pia-arachnoiditis frequently produced neurologic findings simulating actual destruction of nerve tissue by the missile, which had passed through one or more of the bony walls of the neural canal. These lesions are surgically remediable and carry a more favorable prognosis. Operation has been strikingly effective as late as three months after injury. A complete myelographic study including prone, supine and oblique views may reveal the intrathecal anatomy in three dimensions. This can be done in all cases except in those in which there is complete subarachnoid block and in lesions of the upper cervical region. Myelography may reveal a residual remediable lesion even after presumably thorough surgical exploration. Lesions which do not produce considerable indentation, compression or other deformity of the oil column are not surgically remediable. A normal myelogram or one showing minimal deformity is of considerable negative value. The use of myelography is recommended for preoperative diagnosis, when operative records are inadequate or missing, for evaluation of a doubtful postoperative course, for the diagnosis of late sequelae or complications of previous operations or penetrating wounds and for final evaluation and disposition of patients with persistent neurologic findings at the completion of treatment.

American Review of Soviet Medicine, New York

3:385-480 (June) 1946

*Treatment of Retinitis Pigmentosa with Intramuscular Injections of Cod Liver Oil. V. P. Filatov and V. A. Verbitska.—p. 388.
Retinitis Pigmentosa. V. P. Filatov.—p. 395.
Implantation of Preserved Placenta in Retinitis Pigmentosa. V. P. Filatov and V. A. Verbitska.—p. 397.
Implantation of Preserved Liver in Retinitis Pigmentosa. V. P. Filatov and V. A. Verbitska.—p. 398.
Natural and Acquired Immunity to Influenza: III. Reactivation of Influenza Virus from Immune Serum-Virus Mixture. A. A. Smorodintsev and O. I. Shishkina.—p. 400.
Vital Studies of Neuroplasm. N. A. Smitten.—p. 414.
Experimental Studies of Lysozyme. O. I. Ponomareva.—p. 426.
Lysozyme in Surgery. O. I. Ponomareva.—p. 432.
Antireticular Cytotoxic Serum in Chronic Skin Ulcers. L. N. Mashkilleison.—p. 443.

Treatment of Retinitis Pigmentosa.—Filatov and Verbitska gave intramuscular injections of cod liver oil to 12 patients with retinitis pigmentosa. The patients were between the ages of 15 and 50 years. A rapid improvement manifested by an increase in acuity of vision and in light sensitivity resulted in some instances after one or two injections. The increase in light sensitivity after cod liver oil treatment was superior to that resulting from other methods; in 1 patient there occurred an increase in light sensitivity of 1,000 times, in another patient an increase of 50 times and in 5 patients an increase of 10 times. Good results were obtained in very severe chronic forms of the disease. Although the cases reported could not be followed up for a long enough period to draw final conclusions with regard to prolonged treatment or repeated injections at intervals, the parenteral use of cod liver oil in the treatment of retinitis pigmentosa proved highly effective and deserves further study.

Annals of Internal Medicine, Lancaster, Pa.

24:955-1144 (June) 1946

The Doctor, the Patient and the Truth. C. C. Lund.—p. 955.
Legal Privilege, on Therapeutic Grounds, to Withhold Specific Diagnosis from Patient Sick with Serious or Fatal Illness. H. W. Smith.—p. 960.
Observations on Tuberculosis Control in University Hospital. C. Muschenheim, P. A. Bunn and Frances S. Lansdown.—p. 968.
Morbidity and Mortality in Santo Tomas Internment Camp. E. F. Pearson.—p. 988.
Survey of Dysentery in Prisoners of War. H. A. Slesinger and R. P. Elrod.—p. 1014.
Use of Neoarsphenamine in Treatment of Amebic Dysentery. J. C. Bruce.—p. 1025.
*Studies in Rheumatic Fever: II. Absorption of Salicylates. R. W. Huntington Jr., Rosalie D. Ryan, H. R. Butt and others.—p. 1029.
Treatment of Rheumatic Fever by Roentgen Ray Irradiation. G. C. Griffith and E. P. Halley.—p. 1039.
Reiter's Disease: Report of 2 Cases. J. R. Twiss and A. H. R. Douglas.—p. 1043.
*Spontaneous Mediastinal Emphysema. I. D. Fagin and E. H. Schwab.—p. 1052.

Absorption of Salicylates in Rheumatic Fever.—Huntington and his associates studied serum salicylate levels following oral, rectal and intravenous administration of sodium salicylate and of acetyl salicylate, the effect of concomitant administration of sodium bicarbonate and differences in serum

salicylate among groups supposedly receiving the same dosage. They state that, since large doses of salicylate are unpleasant to take and induce irresponsibility comparable to that of alcohol, supervision is necessary to insure that the medication is taken. With few exceptions apparent irregularities in absorption or excretion have turned out to be irregularities in ingestion. Salicylate is absorbed well from the upper gastrointestinal tract and poorly from the lower intestinal tract. Rectal administration of salicylate is cumbersome and inefficient, and enteric coating of tablets given by mouth seems contraindicated. Gastric irritation can be minimized by simultaneous administration of food or sodium bicarbonate. Small doses of sodium bicarbonate are sufficient and are without significant effect on the serum salicylate level. Differences between the results obtained by the authors and those of Katharine Smull are doubtless due to her use of enteric coated tablets and of large doses of bicarbonate. Their own experience does not justify frequent intravenous administration of salicylate.

Spontaneous Mediastinal Emphysema.—Three cases of spontaneous mediastinal emphysema are reported by Fagin and Schwab. The prominent diagnostic features are anterior chest pain, mediastinal crepitation, diminished cardiac dulness, frequent occurrence of pneumothorax or subcutaneous emphysema, roentgenographic evidence of mediastinal air and the absence of shock, fever, leukocytosis, accelerated sedimentation rate or significant electrocardiographic changes. All the cases reported beyond infancy have been characterized by a benign course and a satisfactory response to symptomatic treatment. Recurrences are not uncommon, and the syndrome may be due to an underlying constitutional defect. Reassurance is the most beneficial treatment for the majority of patients. Analgesics may be necessary to control the pain at the onset, and it is probably advisable for these patients to be at rest until the symptoms begin to abate. Symptomatic measures have been successful, but it is conceivable that a patient may be encountered in whom it might be necessary to induce a pneumothorax to stop the escape of air from the lung into the perivascular tissues, or in whom incisions may be necessary to allow escape of air trapped in the mediastinum.

Annals of Surgery, Philadelphia

123:965-1132 (June) 1946

Exarticulation of Lower Extremities for Malignant Tumors: Hip Joint Disarticulation (With or Without Deep Iliac Dissection) and Sacroiliac Disarticulation (Hemipelvectomy). G. T. Pack and H. E. Ehrlich.—p. 965.
Chest Wounds in Battle Casualties. J. P. West.—p. 986.
Thoracoabdominal Wounds Without Abdominal Signs: Report of 2 Cases. R. M. Bolman and C. J. Caul.—p. 992.
Wounds of Urinary Bladder: Analysis of 155 Cases. L. M. Michels.—p. 999.
Surgical Treatment of Funnel Chest. C. W. Lester.—p. 1003.
Use of Testosterone Propionate in Treatment of Advanced Carcinoma of Breast. F. E. Adair and J. B. Herrmann.—p. 1023.
Coincident Removal of Additional Structures in Resections for Carcinoma of Colon and Rectum. E. D. Sugarbaker.—p. 1036.
*Choledochus Cyst. E. F. McLaughlin.—p. 1047.
Repeated Massive Intestinal Hemorrhage: Report of Unusual Case. S. Z. Hawkes and R. F. Spencer.—p. 1063.
Neurofibroma of Small Intestine with Massive Hemorrhage. H. L. Baker and H. Halley.—p. 1067.
*Adenolymphoma of Parotid and Submaxillary Salivary Glands. E. A. Gaston and C. G. Tedeschi.—p. 1075.
Pilonidal Cysts and Sinuses: Technic for Excision and Primary Closure. B. B. Larsen.—p. 1090.
Basic Principles in Geriatric Surgery. L. Carp.—p. 1101.
Wound Healing with Low Vitamin C Level. H. M. Carney.—p. 1111.

Choledochus Cyst.—McLaughlin presents the history of a Negro aged 22 who could not eat as much as he wanted to because of the distress which came on after eating. As this grew worse he cut down more and more on the quantity and finally began to skip meals, losing 25 pounds (11 Kg.). A cystic mass in the upper right quadrant was demonstrated by x-ray. Although it is almost an impossibility to make an absolute diagnosis of a choledochus cyst preoperatively, in the present instance it headed a list of diagnoses, including pancreatic cyst, retroperitoneal cyst and liver cyst. X-ray examination was of great help by directing attention to the biliary tract in the finding of a "nonfunctioning gallbladder," in outlining the cyst by means of views taken from various positions, in demonstrating the relation of the cyst to the gastrointestinal tract and by showing the presence of gas in the gallbladder above the cyst. Operation consisted in removing approximately nine tenths of the cyst and anastomosing the remaining portion of the dome (that part into which the cystic and common hepatic ducts entered) to the duodenum. The operation is a technically simple method of accomplishing anastomosis and, judging by the clinical results in this case, a satisfactory one.

Adenolymphoma of Salivary Glands.—Gaston and Tedeschi describe 2 cases of papillary cystadenoma lymphomatosum of the parotid salivary gland and 1 case of a purely cystic variety of the same tumor. These are rare tumors, occurring 4.5 times more frequently in men than in women. The authors review the theories of the histogenesis and agree with Warthin that the tumors probably arise from epithelium of the embryonic pharyngeal entoderm or upper respiratory tract displaced to the region of the parotid gland. Papillary cystadenoma lymphomatosum and its histologic variants are probably always benign. The results of surgical excision are excellent. The authors also report a morphologically and clinically malignant tumor of the parotid gland consisting of a combination of glandular and lymphoid tissue. They suggest a classification of adenolymphomatous tumors of the parotid and submaxillary regions which is based on morphology. Under this classification "adenolymphoma" may be used as a general term to designate any tumor of this region whose morphology consists of a more or less exclusive combination of epithelial and lymphoid elements, whether benign or malignant.

Archives of Ophthalmology, Chicago

35:603-736 (June) 1946

Color Vision and Recent Developments in Color Vision Testing. L. H. Hardy, Gertrude Rand and M. Catherine Rittler.—p. 603.
*Transplantation of Human Vitreous: Preliminary Report. N. L. Cutler.—p. 615.
*Suprasellar Meningiomas Associated with Scotomatous Field Defects. N. S. Schlezinger, B. J. Alpers and B. P. Weiss.—p. 624.
Hydrogen Ion Concentration of Aqueous. L. von Sallmann and Jeanette Di Grandi.—p. 643.
Treatment of Chronic Blepharoconjunctivitis with Penicillin Ointment: Report of 25 Cases. S. H. Stein.—p. 655.
Heredodegenerative Diseases of Retina: Attempt at Classification. H. Elwyn.—p. 662.
Action Spectrum of Keratitis Produced by Ultraviolet Radiation. D. G. Cogan and V. Everett Kinsey.—p. 670.
Intraorbital Melanosis and Intracranial Neuroepithelioma of Optic Nerve: Report of Case. C. A. Perera and A. P. Stout.—p. 678.
Use of Penicillin Ointment in External Ocular Conditions. L. L. Mayer.—p. 688.

Transplantation of Human Vitreous.—Cutler conducted experiments on laboratory animals which demonstrated that transplantation of vitreous from the eye of one animal to that of another of the same species is a safe procedure. The absorption of a hemorrhage in the vitreous may sometimes be long delayed but will clear after many months. In other cases retinitis proliferans with vitreous bands and adhesions will develop, with disastrous results to the eye. Cases available in the army hospital have been those of old hemorrhage into the vitreous chamber. In the 3 cases in which transplantation of the vitreous was performed there had been injuries to the eyes in 2 and apparently a spontaneous hemorrhage in 1. In 2 of 3 cases in which transplantation of vitreous was done, the procedure was successful up to the time of this report. From 1.5 to 2 cc. is the maximum amount of vitreous which can be withdrawn through a 15 or 18 gage needle from the recipient eye. The blood group does not appear to be significant. There was a decided reduction in the opacity of the vitreous in the cases in which the operation was successful. The pathologic vitreous appeared to be more fluid than normal, but it was not possible to determine whether it became more fluid with the admixture of transplanted vitreous. There was a moderate reaction after the procedure, but no evidence of a foreign protein reaction was noted. The tension in all 3 cases returned to normal within a reasonable period and remained normal. The procedure was successful in cases of spontaneous as well as of posttraumatic hemorrhages in the vitreous.

Suprasellar Meningiomas with Scotomatous Field Defects.—Suprasellar meningiomas are associated in typical instances with atrophy of one or both optic nerves and bitemporal hemianopsia, but it is not sufficiently well recognized that

sudden visual loss with scotomas in the visual fields, associated with headaches, may be a part of the suprasellar tumor syndrome. The development of symptoms may be so rapid and may simulate so closely the clinical picture of retrobulbar neuritis that care must be exercised to avoid discarding a diagnosis of suprasellar meningioma. Schlezinger and his associates describe 4 instances which demonstrate the early occurrence of scotomatous field defects in patients with suprasellar meningiomas. Characteristically, the scotomatous field defects in such cases become identifiable as a clue to the existence of a prechiasmal or chiasmal lesion by combining with a peripheral encroachment on the visual field at some point so as to produce an expanding sector defect. The authors believe that the syndrome of atrophy of the optic nerve with bitemporal visual field defects should be broadened to include the combination of optic nerve atrophy and expanding scotomatous field defects. In the absence of headaches and of deformities of the sella turcica, the combination of optic nerve atrophy with either bitemporal or scotomatous field defects is sufficient to warrant routinely the performance of complete examination of the spinal fluid and pneumoencephalography. Since meningiomas are benign tumors and since the suprasellar location of meningiomas is accessible, an early diagnosis of these tumors is to be desired.

Endocrinology, Springfield, Ill.

83:263-336 (May) 1946

Effect of Thyroxin and Dinitrophenol on Thermal Responses to Cold. Margaret Lindsay Turner.—p. 263.
Observations on Chemical Cytology of Thyroid Gland at Different Functional Stages. E. W. Dempsey and M. Singer.—p. 270.
Role of Adrenals in Production of Nephrosclerosis by Anterior Pituitary Preparations. C. E. Hall, P. Dontigny, E. Beland and H. Selye.—p. 296.
Effect of Vitamin B Complex Deficiency, Controlled Inanition and Methionine on Inactivation of Estrogen by Liver. V. A. Drill and C. A. Pfeiffer.—p. 300.
Influence of Selected Goitrogenic Compounds on Thyroid Gland of Chick. W. P. Vanderlaan and A. Bissell.—p. 308.
Influence of Adrenal Cortical Steroids on Blood Pressure and Rate of Progression of Experimental Nephritis in Rats. A. I. Knowlton, H. Stoerk, Beatrice C. Seegal and Emily N. Loeb.—p. 315.
Hyperplasia of Thyroid Gland of Rhesus Monkeys After Thiouracil Treatment. E. T. Engle and H. Aranow Jr.—p. 325.
Effects of Administration of Thiouracil to Monkeys. H. Aranow Jr., E. T. Engle and W. M. Sperry.—p. 331.

Gastroenterology, Baltimore

6:357-474 (May) 1946

Hepatitis as Observed in Army General Hospital. J. Bank and L. J. Cheskin.—p. 357.
*Chronic Relapsing Pancreatitis: Study of 29 Cases Without Associated Disease of Biliary or Gastrointestinal Tract. M. W. Comfort, E. E. Gambill and A. H. Baggenstoss.—p. 376.
*Histamine Stimulated Fractional Gastric Analyses: Diagnostic Value of Total Secretion. P. M. Glenn.—p. 409.
Heterotopic Pancreatic Tissue in Region of Pyloric Orifice: Radiologic and Pathologic Analysis of 5 Cases of Clinically Suspected Peptic Ulcer in Which Only Pancreatic Rests Were Found. T. R. Waugh and E. W. Harding.—p. 417.
Effect of Two New Histamine Antagonists (Benadryl and Compound 63) on Histamine Stimulated Gastric Secretion in Dog. W. Sangster, M. I. Grossman and A. C. Ivy.—p. 436.
Influence of Benadryl (Dimethylaminoethylbenzhydryl Ether Hydrochloride) on Gastric Acidity. T. H. McGavack, H. Elias and L. J. Boyd.—p. 439.
Secondary Pellagra Caused by Multiple Argentaffin Carcinoma of Ileum and Jejunum. R. G. D. McNeely and N. W. Jones.—p. 443.
Ulcer Which Appeared in Stomach of Man Receiving Histamine Intravenously. A. M. Iams and B. T. Horton.—p. 449.

Chronic Relapsing Pancreatitis.—Comfort and his associates analyze the clinical and pathologic data on 29 patients with chronic relapsing pancreatitis without associated disease of the biliary or gastroduodenal tracts of a degree sufficient to influence the clinical picture. All but 4 of the patients were males. The ages of the patients varied between 10 and 66 years. Chronic relapsing pancreatitis is the summation of repeated attacks of acute interstitial pancreatitis or of acute hemorrhagic pancreatitis or a combination of the two types. Recurring acute exacerbations are separated by short or long intervals of clinical quiescence. During the early stages the clinician may not be able to demonstrate physiologic changes. Later the destruction of the pancreas will cause disturbances of internal and external secretion and pancreatic calcification. Chronic relapsing pancreatitis manifests itself by recurring prolonged attacks of severe pain in the upper part of the abdomen, by disturbances of function of the acinar and islet cells and by sequelae. When destruction of the acinar and islet cells has become extensive, glycosuria and hyperglycemia, steatorrhea and creatorrhea persist. Pancreatic stones or calcification appear in roentgenograms, and the enlarged organ and cysts may be felt. The clinical picture of chronic relapsing pancreatitis is due not only to disease in the pancreas but also to its effect on neighboring organs, including the stomach, duodenum, small bowel, liver, biliary tract and blood vessels. The most striking of these sequelae are obstruction of the common bile duct, jaundice, hepatitis, distention of the gallbladder and obstruction of the duodenum. The treatment of choice is surgical. The results of conservative surgical procedures (internal or external drainage of the biliary tract and of pancreatic cysts, pancreatolithotomy or gastroenterostomy for duodenal obstruction) are sufficiently good to warrant frequent and early use. Radical surgical procedures (partial or total pancreatectomy) may be utilized if the conservative ones have failed, and then only for relief of persistent and disabling pain. Medical measures include diet and replacement therapy (insulin and pancreatin) for control of diabetes and steatorrhea, drugs for control of pain and supportive measures in case of shock.

Histamine Stimulated Fractional Gastric Analyses.—Fractional gastric analyses were done with the use of 0.0005 Gm. of histamine injected subcutaneously as a stimulant. The fasting stomach was emptied and was again entirely emptied at fifteen minute intervals after histamine stimulation for 4 specimens. All available contents were withdrawn, the patient being turned to both sides and his back and the tube moved to several levels in his stomach during the withdrawal. Patients were all in an eleven to fourteen hours fasting state. They did not smoke before or during the analysis, and all saliva was expectorated during the analysis. The findings in 200 cases of duodenal ulcer were compared with those in 250 control cases. The patients were all soldiers and most were between the ages of 19 and 30. The controls were soldiers who had digestive symptoms quite similar to those of the patients in whom a diagnosis of duodenal ulcer was made. The figures obtained indicated that in the two groups of patients with similar digestive symptoms there is some difference in the histamine stimulated fractional gastric analyses. Little difference is apparent when only the peak stimulated free and total acidity are compared. This is in keeping with the idea that histamine is a maximum stimulant for degree of acid produced and that this acidity reaches a maximum which is attainable in a stomach, frequently regardless of the disease present, as long as the parietal cells are capable of producing acid. When comparison is made considering both the degree of acid and the volume produced, there appears to be more difference, which tends to support the theory of hypersecretion in cases of duodenal ulcer.

Indiana State Medical Assn. Journal, Indianapolis

39:265-330 (June) 1946

Postwar Venereal Disease Problems and Treatment. G. W. Bowman.—p. 265.
Remarks on Early Syphilis. S. R. Mercer.—p. 268.
Clinic in Venereal Disease Control. M. Miller.—p. 271.
Newer Methods of Treatment of Gonorrhea. G. W. Lee.—p. 273.
Penicillin Therapy in Genitourinary Tract Infections. R. L. Smith.—p. 275.
Diagnostic and Serologic Problems in Present Day Management of Syphilis. L. L. Blum.—p. 277.
Serologic Trends and Aspects. L. Y. Mazzini.—p. 282.
Venereal Disease. G. F. Kempf.—p. 285.

39:331-384 (July) 1946

Treatment of Anemia in General Practice. M. F. Beard.—p. 331.
Rare Accident. F. F. Hagie.—p. 334.
Acute Myocardial Infarction Among Young Adults. R. M. Nay.—p. 335.
Historical Background of Malaria—Reconsideration. A. W. Ratcliffe.—p. 339.
Amebiasis Masquerading as Portal Cirrhosis. Laura Hare and J. O. Ritchey.—p. 347.
Case Report of Congenital Aplasia of Pylorus. L. J. Holladay.—p. 350.
*Case of Coarctation of Aorta (Adult Type) with Wolff-Parkinson-White Syndrome. R. M. Moore and G. Dimond.—p. 352.

Coarctation of Aorta with Wolff-Parkinson-White Syndrome.—Moore and Dimond present the case of a 15 year old boy in whom the impression was gained that he probably had a coarctation of the aorta and from whom tracings were

obtained which are typical of the Wolff-Parkinson-White syndrome. The authors believe the relationship of the two conditions coincidental and not causal. The occurrence and recognition of coarctation of the aorta and the Wolff-Parkinson-White syndrome in 1 patient has not been reported previously.

Journal-Lancet, Minneapolis

66:177-208 (June) 1946

Perforation of Choledochus Cyst with Biliary Peritonitis: Report of Case Submitted to Three Stage Operation. H. M. Blegen and Esther L. Boyer.—p. 177.
Report of Unusual Case of Mediastinal Tumor. S. G. Clayman.—p. 184.
Postmeasles and Postmumps Encephalitis. S. L. Arey.—p. 188.
Filariasis and Malaria on Campus. E. H. Hudson.—p. 191.
Oxygen Therapy. J. W. Baird.—p. 193.
Treatment of Trimalleolar Fractures of Ankle. R. E. Van Demark.—p. 196.

New England Journal of Medicine, Boston

234:713-748 (May 30) 1946

Ether Inhalers in Early Use. W. W. Ford.—p. 713.
Health Bills Pending in Congress: Part Three. F. Goldmann.—p. 727.
Normal Growth and Development During Adolescence (concluded). H. C. Stuart.—p. 732.
Carcinoma of Cardia of Stomach, with Periesophageal Extension.—p. 739.
Gastric Ulcer, Acute; Gastritis, Acute.—p. 741.

234:749-772 (June) 6) 1946

Health Bills Pending in Congress: Part Four. F. Goldmann.—p. 749.
*Involvement of Central Nervous System in Infectious Mononucleosis: Report of 2 Cases. J. deR. Slade.—p. 753.
Fluorine and Dental Caries. V. A. Getting.—p. 757.
Diffuse Plasma Cell Myeloma; Lower Nephron Nephrosis (Bence Jones Proteinuria Type); Atypical or "Primary" Amyloid Disease, Involving Muscles, Joints, Heart and Blood Vessels.—p. 763.
Adenocarcinoma of Jejunum.—p. 766.

Central Nervous System in Infectious Mononucleosis.—Slade cites 2 cases which illustrate the encephaloneuronitic and encephalomyelitic types of infectious mononucleosis. In both patients there was evidence of permanent damage to the nerve tissue. At the time of admission the clinical impression was that of infectious mononucleosis. When the paralytic symptoms appeared, poliomyelitis was considered, but the Paul Bunnell titer in poliomyelitis is not higher than 1:28. Clinical observations support the concept of infectious mononucleosis as a generalized infection with localization in one or more of the tissues or organs of the body. In the cases described there was apparently diffuse and spotty involvement of the nervous system. The clinical picture is similar to that produced by viruses of other diseases and suggests that this too may be a virus infection. Infectious mononucleosis is a potentially serious disease.

New York State Journal of Medicine, New York

46:1281-1406 (June 15) 1946

*Tularemia in New York State. I. J. Tartakow.—p. 1329.
Ulcers About Anorectum. S. T. Ross.—p. 1339.
Stem Pessary for Dysmenorrhea. J. C. Potter.—p. 1346.
Tropical Encephalopathy: Malaria and Solar Etiology. J. L. McCartney.—p. 1348.
Recrudescence of Syphilis in New York State. I. Rosen.—p. 1353.
Eradication of Breast Cancer, Its Feasibility and Consequences: Reply. S. Peller.—p. 1355.
Treatment of Lymphogranuloma Venereum and Granuloma Inguinale. B. A. Kornblith.—p. 1358.

Tularemia in New York State.—Tartakow reports 4 cases of tularemia studied by him and reviews cases registered in New York State since 1927, which totaled 81, of which 45 occurred in New York City. Wild rabbit was the main source of infection, although several cases resulted from contact with other wild life and from insect bites. The source of 19 of the 36 cases which occurred in upstate New York was found to be within the state, indicating that tularemia is more common among wild life in New York State than is generally supposed. Among preventive measures it is stressed that the hunter should not kill or handle a wild rabbit or hare which is too sick to run or which is caught by the dog. Rubber gloves should be worn when skinning and dressing wild rabbits. A person who has sores or cuts on his hands should not clean rabbits. If the skin is injured, the wound should be immediately washed with soap and water, after which an antiseptic solution should be applied. The hands of the rabbit handler should be kept away from the eyes. Wild rabbit meat should be thoroughly cooked in order to destroy the organism causing tularemia, as it will remain alive and virulent in the red juice of the bones of partly cooked game. Refrigeration does not kill the organisms. Hunters, trappers, campers and woodsmen should wear tick-proof clothing during summer.

Northwest Medicine, Seattle

45:381-460 (June) 1946

Prostatic Surgery of Today. O. A. Nelson.—p. 406.
Surgical Accidents of Female Ureter. A. H. Peacock.—p. 409.
Surgery of Spleen. J. A. Duncan.—p. 411.
Caudal Anesthesia in Obstetrics. E. G. Layton.—p. 413.
Principles versus Mechanisms in Surgery. E. B. Speir.—p. 415.
Role of Roentgenography in Intestinal Obstruction. H. V. Hartzell.—p. 416.
Ligation of Femoral Vein for Thromboembolism. M. Norgore.—p. 421.
*Scarlet Fever Prophylaxis with Penicillin. B. Schuster.—p. 424.
Rapid Citrated Blood Transfusions. G. A. Dodds.—p. 426.

45:461-540 (July) 1946

Postoperative Salt Intolerance. J. W. Nadal.—p. 486.
Fluid Therapy in Burns. J. M. Guiss.—p. 488.
Transverse Abdominal Incisions and Early Postoperative Ambulation. A. M. Boyden.—p. 491.
Postoperative Pulmonary Complications: Their Prevention and Treatment. W. S. Conklin.—p. 494.
Vaginal Smear: Its Value and Significance in Diagnosis of Uterine Carcinoma. L. Patricelli.—p. 496.
Cosmetic Reduction of Full, Everted Lower Lip. C. Firestone.—p. 499.
Criteria for Use of Penicillin in Empyema. J. K. Poppe.—p. 501.
Rheumatic Fever Here and in European Theater of Operations. R. F. Foster.—p. 503.

Penicillin in Prophylaxis of Scarlet Fever.—Schuster says that in the screening of men in the receiving station and ships in the Seattle-Bremerton area the Navy Medical Department has discovered 12 cases of scarlet fever since Jan. 1, 1946 to April 1, 1946, with approximately 1,000 men who were possible contacts. The latter were screened and 347 cultures were taken. Of these 56, or 16.1 per cent, were positive for beta hemolytic streptococci. Allowing the 8 per cent positive as control, the incidence in this group was double that percentage in healthy men of the armed forces, indicating contact spread of the beta hemolytic streptococci. Forty-six of the 56 men with positive cultures were treated with 20,000 units of penicillin every three hours until 140,000 units had been administered. The last 10 men were treated with a single intramuscular injection of 200,000 units of penicillin in 2 per cent beeswax in peanut oil. Throat cultures twenty-four hours after treatment with penicillin were negative for beta hemolytic streptococci in all but 2 cases. One of these cleared on a repeat single dose of 200,000 units of penicillin in 2 per cent beeswax in peanut oil. The remaining patient continued to be positive and was transferred to the U. S. Naval Hospital as a streptococcus carrier. None of the 56 patients developed scarlet fever.

Occupational Medicine, Chicago

1:425-514 (May) 1946

Silicosis, Most Important of Pneumonoconioses. N. Enzer.—p. 425.
Technical and Social Advances in Industrial Hygiene. J. J. Bloomfield.—p. 443.
Total Avulsion of Scalp: Review of Problem, with Presentation of Case of Skin Graft in Which Thrombin Plasma Fixation Was Used. Claire L. Straith and W. G. McEvitt.—p. 451.
New Assistant for Plant Physician: Industrial "Sanitationist." M. H. Solworth.—p. 463.

Symposium on Health Education in Industry

Status of Health Education in Industry. I. Galdston.—p. 471.
Industrial and Community Health Education. L. Greenburg.—p. 475.
Health Education in Small Industries. Marie Goulett.—p. 477.
Fort Greene Industrial Health Plan. P. Shostac.—p. 479.
Effects of Industrial Exposure to Quinacrine Hydrochloride. O. W. Barlow, L. W. Gorham and A. J. Bedell.—p. 482.

Psychosomatic Medicine, Baltimore

8:161-226 (May-June) 1946. **Partial Index**

Emotional Factors in Course of Pregnancy. R. Squier and F. Dunbar.—p. 161.
Psychoendocrine Relationships in Pseudocyesis. A. Steinberg, N. Pastor, E. B. Winheld and others.—p. 176.
Comparison of Exercise Response in Anxiety States and Normal Controls. M. Jones and Veronica Mellersh.—p. 180.
Effect of Exercise on Soldiers with Neurocirculatory Asthenia. M. Jones and R. Scarisbrick.—p. 188.
Comparison of Exercise Response in Various Groups of Neurotic Patients, and Method of Rapid Determination of Oxygen in Expired Air, Using Catharometer. M. Jones and Veronica Mellersh.—p. 192.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Heart Journal, London

8:53-114 (April) 1946

Electrocardiographic Abnormalities in Severe Malnutrition. L. B. Ellis. —p. 53.
Effect of Nitrite and Exercise on Inverted T Wave. W. Stokes.—p. 62.
Auricular Premature Systoles: Duration of Electrical Systole. K. Berliner.—p. 69.
Pulmonary Vascular Sclerosis with Right Ventricular Failure. A. M. Barrett and L. Cole.—p. 76.
Precordial Electrocardiograms: Comparison of CF and V Lead Connections. L. Wallace and N. Grossman.—p. 83.
Bilharzial Heart Disease in Egypt. Cor Pulmonale Due to Bilharzial Pulmonary Endarteritis. D. E. Bedford, S. M. Aidaros and B. Girgis, —p. 87.
*Mechanism of Wolff-Parkinson-White Syndrome. R. J. Duthie.—p. 96.
Postural Hypotension. T. East and W. Brigden.—p. 103.
Cardiovascular Diseases in British Army Overseas. R. A. Moir and K. Shirley Smith.—p. 110.

Mechanism of Wolff-Parkinson-White Syndrome.—Duthie observed a typical case of Wolff-Parkinson-White syndrome. He thinks that premature excitation (or preexcitation) of the ventricle is probably the cause. Necropsy reports suggest that this is due to accessory conducting bundles between the auricles and ventricles. Other abnormalities, such as an accessory branch of the main bundle, could cause preexcitation and should be looked for in future necropsies. Preexcitation may vary in degree. The degree of short circuiting of the auriculoventricular conduction may depend on the position of the accessory bundle or bundles, and it generally changes or disappears with variation of the vagal tone. A case has been described showing slight preexcitation, which has been present for at least ten years. Preexcitation is generally demonstrated by changes in the PQ interval after injection of atropine, but a case with almost fixed preexcitation is described.

British Journal of Radiology, London

19:217-256 (June) 1946

Discussion on Malignant Melanomata. P. J. Moir, E. K. Dawson, Margaret C. Tod and others—p. 217.
Direct Reading X-Ray Intensity Comparator: Its Radiologic and Physical Applications. L. A. W. Kemp.—p. 233.
Subacute Volvulus of Terminal Ileum: Case Report. E. Tiscenco. —p. 243.
Anaerobic Cellulitis Due to Actinomyces, Associated with Gas Production. F. H. Kemp and R. L. Vollum.—p. 248.
Effect of Dose Rate Variations on Mitosis and Degeneration in Tissue Cultures of Avian Fibroblasts. I. Lasnitski.—p. 250.

British Medical Journal, London

1:943-976 (June 22) 1946

Chemistry Related to Medicine. R. Robinson.—p. 943.
Lumbosacral Root Pain. J. MacD. Holmes and B. R. Sworn.—p. 946.
*Treatment of Sonne III Bacillary Dysentery and Bacillary Dysentery ("Clinical") with Phthalylsulfathiazole. J. Brodie, R. P. Cook, Constance F. Drysdale and D. G. McIntosh.—p. 948.
Bacteriology of Stomach and Duodenum in Cases of Peptic Ulcer and Gastric Carcinoma. Mary Barber and R. H. Franklin.—p. 951.
Treatment of Branchial Cleft Cysts by Aspiration and Injection of Pure Carbolic Acid. T. F. Jarman.—p. 953.

Phthalylsulfathiazole for Bacillary Dysentery.—Brodie and his associates present the results obtained by the treatment of 48 cases of Sonne III bacillary dysentery and 40 cases of "clinical" bacillary dysentery (i. e., cases showing blood and mucus in stools but from which no pathogenic organism was isolated) with phthalylsulfathiazole. The average periods required for the establishment of clinical cure were 8.73 days for the Sonne III cases and 9.83 days for the "clinical" cases. The results obtained in the former group were inferior when compared with those obtained by Jamieson, Brodie and Stiven (1944), who treated 200 mixed cases of bacillary dysentery, of which 39 were Sonne III infections, with sulfaguanidine, aperients and chalk, the corresponding figures for clinical cure being 5 days, 6.5 days and 6 days respectively for the total group and 4.7 days, 6.3 days and 7.6 days for the Sonne III cases. On the other hand, the results are in agreement with those obtained by Swyer (1943), who found that the stools in 57 Sonne III cases treated with sulfapyridine remained abnormal for 9 days, compared with 20 days for a control group of 35 cases. The incidence of clinical relapse was high in the cases treated with phthalylsulfathiazole, being found in 25 of 48 Sonne III cases and 20 of 40 clinical cases. Ten (20.8 per cent) of the 48 Sonne III cases treated with phthalylsulfathiazole gave a positive bacteriologic result in convalescence, which is considerably lower than the figures quoted by Jamieson, Brodie and Stiven. The authors point out that the mild nature of cases of bacillary dysentery renders evaluation of the effects of different therapeutic agents difficult. The results of the present investigation indicate that, while phthalylsulfathiazole did not appreciably influence the clinical course of Sonne III dysentery, it reduced considerably the number of cases bacteriologically positive in convalescence.

Medical Journal of Australia, Sydney

1:681-716 (May 18) 1946

*Further Observations on Rat Leprosy. J. W. Fielding.—p. 681.
Clinical Aspects of Fetal Erythroblastosis. Kate Campbell.—p. 686.
Nongonococcal Urethritis in Australian Troops Stationed in Borneo. S. Williams.—p. 693.
Chromoblastomycosis, with Reports of 2 Cases Occurring in Queensland. W. J. Saxton, F. Hatcher and E. H. Derrick.—p. 695.

Rat Leprosy.—Fielding shows that fecal organisms have been responsible for the infection of rats with leprosy. In experiments simulating natural infection, rats and mice showed a building up of organisms which was followed by their gradual complete elimination. When removed from infected soil at seventy-two days, other rats also became free from leprosy organisms. These results suggest the necessity of superinvasion by highly viable organisms for the production of lesions; they suggest also that viability of organisms can be lowered or destroyed by reactive changes (souring) in a feces-soil-water mixture. Simple carbolization of rat leprosy organisms for two to seven days was not sufficient to destroy their viability. Infection of rats by rat leprosy is not enhanced by vitamin B_2 deficiency. Fecal organisms from leprous rats after three years' storage are capable of invading the skin of rats and mice. Muscular layers in rats and mice probably act as bases for storage of organisms in rat leprosy. Light infections of rat leprosy are recorded in Rattus norvegicus and Rattus rattus in the Sydney region.

Practitioner, London

156:405-480 (June) 1946

Spastic Colon. C. A. Birch.—p. 405.
Diverticulitis and Diverticulosis. M. Shaw.—p. 411.
Carcinoma of Colon. W. A. D. Adamson.—p. 419.
Hirschsprung's Disease. W. Sheldon.—p. 425.
Ulcerative Colitis. A. M. Cooke.—p. 429.
Constipation. D. Leys.—p. 437.
Minor Medical Maladies of Old Age. T. H. Howell.—p. 444.
Treatment of Chronic Faucial Diphtheria by Tonsillectomy. F. Boyes Korkis.—p. 450.
Dyspepsia of Peptic Ulcer Type and Its Relationship to Personality Type and Anxiety. B. M. C. Gilsenan.—p. 456.
Early Recognition of Disease: VI. Mental Disorders. A. Lewis.—p. 459.

Quarterly Journal of Medicine, Oxford

15:91-156 (April) 1946

Description of Outbreak of Beriberi, with Special Reference to Etiology of Beriberi and Epidemic Dropsy. E. R. Cullinan, A. Kekwick, A. S. Watts and W. L. Titman.—p. 91.
Heart in Anemia. A. Hunder.—p. 107.
Complete Congenital Agenesis of Lung. J. Smart.—p. 125.
*Anomalies of Intestinal Absorption of Fat: I. Determination and Significance of Fecal Fat. W. T. Cooke, J. J. Elkes, A. C. Frazer and others.—p. 141.

Determination and Significance of Fecal Fat.—Cooke and his associates carried out fat balance tests on a 50 Gm. fat intake on 120 patients. Forty-one of these patients (with diarrhea, anemia and gastrointestinal disorders except for those with steatorrhea) were used as controls and in them the fat was usually absorbed with variations between 91 and 99 per cent. In 29 cases of idiopathic steatorrhea the average absorption was 73 per cent (with a range of 29 to 91 per cent). Abnormal fat absorption is also reported in cases of tropical sprue, pancreatitis and surgical cases with gastrocolic fistula and ileotransverse colostomy. Microscopic examination of feces, although frequently revealing excess fatty crystals, was not found to be a

reliable method of detecting abnormal fat absorption. While feces containing abnormal amounts of fat are often pale and bulkier than usual, they may be perfectly normal in color and consistency. The percentage of fat in dried feces has not been found to be a reliable criterion in the differentiation of normal from abnormal absorption. Percentage hydrolysis of fecal fat was found to be of little value in the diagnosis of diseases of the pancreas. Malabsorption of fat could not be attributed to an increased rate of passage of intestinal contents through the small intestine. It is suggested that the correlation of dietary and fecal fat as fatty acid is sufficient for the detection of cases of defective fat absorption.

Presse Médicale, Paris

54:361-372 (June 1) 1946

*Changes in Lipoids and Proteins in Course of Edematous Nephritis. Pasteur Vallery-Radot, R. Wolfromm, C. Laroche and J. Tabone.—p. 361.
Serous Meningitis Associated with Recent Cranioencephalic Trauma. P. Goinard, Mrs. Lepintre and P. Descuns.—p. 362.
Treatment of Tuberculosis of Lungs with Silence and Immobilization. R. Cohen.—p. 363.

Edematous Nephritis.—Pasteur Vallery-Radot and his associates studied 28 cases of nephritis of different types. Important changes in the proteins and lipoids of the blood were observed in edematous nephritis. There was a constant drop in serum albumin associated with global hypoproteinemia, and there was an increase in the total lipoids of the blood paralleled by an increase in cholesterol. The reappearance of edema may be expected in cases in which the hypoproteinemia persists after the edema has subsided. These changes in the lipoids and in the proteins, as well as lipoiduria, may occur likewise in lipoid nephrosis, but differential diagnosis between this condition and edematous nephritis should be based on considerations such as these: The lipoid-protein syndrome is less pronounced in edematous nephritis; microscopic hematuria may occur in edematous nephritis but not in lipoid nephrosis; the edema may frequently be associated with hypertension and azotemia in edematous nephritis but not in lipoid nephrosis; renal function tests may reveal normal conditions in lipoid nephrosis but may suggest disorders in edematous nephritis. Lesions in the fundus oculi may be observed only in edematous nephritis.

Revue Neurologique, Paris

78:1-84 (Jan.-Feb.) 1946

*Electroencephalographic Changes Resulting from Pleuropulmonary Lesions: Study of Pleural Reflex. I. Bertrand, P. Salles, J. Godet and G. Mazars.—p. 3.
Cerebellum Controls Inertia of Muscles in State of Rest or Movement. L. Ectors.—p. 14.
Sign of Forearm. I. Lesny and J. Vitek.—p. 24.

Electroencephalographic Changes from Pleuropulmonary Lesions.—Bertrand and his associates studied 14 patients with unilateral pleuropulmonary lesions between the ages of 12 and 24 years. The graphic recordings of the electric currents were made during rest, after hyperpnea and in 5 cases in the course of pleural puncture. Important changes were demonstrated in 11 cases: they were homolateral in 7 cases, bilateral in 2 and contralateral again in 2 cases. These changes reveal a cortical hypertonia whose most attenuated degree consists in a reaction of arrest with rare α waves and predominance of β trains. Numerous spikes with a rhythm near to 15 Hertz occur frequently. In cases in which the repercussion is more pronounced the phenomena of cortical after-discharge are manifested by waves of highly increased frequency and potential, so that true electrical storms may be recorded similar to infraclinical epileptic storms. The pleural puncture unlatches enormous cerebral potentials at the same side on which the permanent changes of the electroencephalogram appear. Repeated punctures still increase the cortical hypertonia. In 1 of the patients with a pleuropulmonary lesions at the left side and with electroencephalographic repercussions on the right, the pleural puncture elicited a Bravais-jacksonian crisis at the left side, as was expected. Thus a pleurocerebral reaction and its part in eliciting nervous accidents of pleural puncture seem to be demonstrated, which does not exclude the possibility that air embolism may likewise play its part in the production of such accidents.

Annales Pædiatrici, Basel

166:225-280 (May) 1946

*Trichomonas Enteritis (Dysentery Due to Flagellates) in Children. A. Eckstein.—p. 225.
Suppurating Varicellar Vesicles Accompanied by Focal Necroses, Granulomas and Hemorrhages in Internal Organs. A. Studer.—p. 238.
Desensitization in Allergic Diseases in Children. O. Brandberg and O. Wilander.—p. 250.
Copper Content in Cerebrospinal Fluid. S. Axtrup.—p. 259.
Symptomatology of Familial Amaurotic Idiocy. E. Nassau.—p. 265.

Trichomonas Enteritis in Children.—Among children with diarrhea there are usually some who prove refractory to treatment, and in searching the stools of such children for amebas Eckstein occasionally found active Trichomonas intestinalis, while amebas were absent. He presents brief histories of 4 children between 7 and 19 months in whom following detection of trichomonas infection cure was quickly obtained after treatment with quinacrine or acetarsone. A search for the incidence of Trichomonas infections among children with diarrhea, excluding those with bacterial and amebic dysentery, revealed that in the different age groups up to 14 years it varied between 6 and 15 per cent. The author reports 2 additional cases of trichomonas enteritis in children aged 7 and 8 years respectively, who also were successfully treated with quinacrine and acetarsone. Eckstein thinks that these observations indicate that Trichomonas intestinalis cannot be regarded as a harmless intestinal parasite. Most patients with trichomonas enteritis were admitted to the hospital in severe dystrophy due partly to the long duration of the diarrhea and sometimes also to a prolonged administration of an incomplete diet. After specific treatment they were cured quickly.

Hospital, Rio de Janeiro

29:669-840 (May) 1946. **Partial Index**

*BCG Vaccination Against Tuberculosis. G. Sayago, A. P. H. Degoy and A. Chattás.—p. 669.

BCG Vaccination Against Tuberculosis.—The total of immunized children in Cordoba, Argentina, from 1935 to 1944 amounted to 17,976, the highest annual rate of vaccination having been reached in 1941, when 49.3 per cent of the city's births were given BCG. The Calmette vaccine was also sent to other cities in Argentina and to Bolivia, raising the total number of immunizations to 23,857 up to 1944. Intradermal injections of 0.15 mg. of BCG have been used routinely for immunizing most of the children and newborn infants. Mantoux test with increasing doses of old tuberculin up to 10 mg. were used; 98.3 per cent of the vaccinated became allergic. From comparative investigations carried out in vaccinated and nonvaccinated children in Cordoba it was found that (*a*) the general mortality within the first year amounted to 8.3 per cent for the vaccinated and 15.6 per cent for the control group, (*b*) a weak degree of tuberculin sensitivity was prevalent among the vaccinated in contrast to the strongly positive results with Mantoux test in children of the control group and (*c*) chest x-ray examinations performed on the vaccinated group disclosed 57.5 per cent of lesions among children with tuberculous contacts and 18.9 per cent among noncontacts, while in the control group there were 74.3 per cent of lesions in children living in tuberculous households and 47.6 per cent in the noncontacts.

Semana Médica, Buenos Aires

53:781-818 (May 2) 1946. **Partial Index**

*Recurrence of Poliomyelitis: Case. R. Abuin Figueroa, M. Seoane, R. Damonte, M. Blanco and N. Bonesane.—p. 785.

Recurrence of Poliomyelitis.—Recurrence of poliomyelitis is rare. The authors report the case of a child who had the disease two years and a half previously. The diagnosis was verified by the changes in the cerebrospinal fluid, which was analyzed on several occasions. The sequel of the first attack was paralysis of an arm, that of the second attack was left peripheral facial paralysis. The patient was hospitalized during both attacks and the diagnosis was established each time.

Book Notices

Essentials of General Anæsthesia. By R. R. Macintosh, M.A., M.D., F.R.C.S., Nuffield Professor of Anæsthetics, University of Oxford, Oxford, England, and Freda B. Bannister, M.A., M.D., D.A., First Assistant, Nuffield Department of Anæsthetics, University of Oxford. Third edition, second reprint. Fabrikoid. Price, $5.50. Pp. 341, with 239 illustations. Springfield, Illinois: Charles C Thomas, 1945.

Since the establishment of the department of anesthesia at Oxford in 1937 many contributions to medical literature have come from the pen of its director, R. R. Macintosh. Not the least of these has been this book, the first edition of which appeared in 1940. The reprinting of this, the third, edition by Charles C Thomas in this country is a welcome convenience to American readers. A tremendous amount of original research and teaching has been accomplished by this department during the war; hence even the slight revisions in this edition are praiseworthy. The book covers a brief and excellently illustrated reference to nearly all the essential factors in the administration of general anesthetic agents. The influence of the senior author's early and extensive experience with anesthesia for dental operations is evident. The historical references are well chosen and of practical value. The unique and highly effective drawings contributed by Miss McLarty deserve special mention. The excellence of her work is further exemplified in a monograph on Brachial Plexus Block by Macintosh and Mushin. Although the book is confined largely to the subject of general anesthesia, it is to be hoped that the monograph offers promise of a complete textbook on anesthesia from the department at Oxford. Meantime this book is extremely valuable to all anesthetists and will be found interesting and instructive reading by all dentists and physicians.

Modern Attitudes in Psychiatry: The March of Medicine, 1945. By Iago Galdston, James H. Wall, William C. Menninger, Edward Weiss, G. Canby Robinson and Franz Alexander. Number X of the New York Academy of Medicine Lectures to the Laity. Cloth. Price, $2. Pp. 154. New York: Columbia University Press, 1946.

This monograph represents an excellent, clear, concise and well oriented symposium relative to the history and employment of psychiatry and psychiatric knowledge in the practice of medicine from the historically known past up to the present time. The book actually consists of a series of lectures given for the public by the New York Academy of Medicine. The lectures were delivered by Dr. Iago Galdston on "Psychiatry in the History of Medicine," Dr. James H. Wall on "The Development of Modern Psychiatry," Dr. G. Canby Robinson on "The Patient as a Person," Dr. Franz Alexander on "Present Trends in Psychiatry and the Future Outlook," Col. William C. Menninger on "Psychiatry and the War" and Dr. Edward Weiss on "Psychotherapy in Everyday Practice." This series of lectures and their publication comes at an opportune period when psychiatry has been brought so forcibly to the foreground as an integral branch of medical science. These lectures have been carefully prepared and intelligently presented. This little book can be quickly and profitably read by physicians and laymen alike.

Diseases of the Skin for Practitioners and Students. By George Clinton Andrews, A.B., M.D., Associate Clinical Professor of Dermatology, the College of Physicians and Surgeons, Columbia University, New York. Third edition. Cloth. Price, $10. Pp. 937, with 971 illustrations. Philadelphia & London: W. B. Saunders Company, 1946.

This book has been one of the standard American textbooks for the past sixteen years, and the material in this edition, as in the first two, is current. It contains all the newer entities and syndromes that have been described in recent years and the newer methods of treatment. The illustrations are particularly good, and there are many of them. The bibliography is also extensive and well selected; the index is full. The grouping and classification of the various diseases are workable ones, and the presentation of the material is in the established didactic manner. Unlike most dermatologic textbooks, there is a great deal—perhaps too much—of detailed consideration given to radiation therapy; and there may be some disagreement with the author's unqualified endorsement of contact radiation. One may question too the author's enthusiastic recommendation of penicillin and sulfonamides for the treatment of altogether too many diseases. Penicillin is recommended for erythema nodosum, eczema, scleroderma, exfoliative dermatitis, acne and even arsenical dermatitis. The statement that "because of the benefits of using penicillin and sulfonamides internally and locally x-ray treatment is required less often than formerly" will hardly meet with general acceptance, particularly by physicians in the armed services, who early were disappointed in the results of the penicillin treatment for acne. It may be that the author's experience warrants his enthusiasm, but a more conservative position would have been better in a book for students, at least until more time has established the worth of penicillin for such a large group of diseases. There is room for disagreement too in the emphasis placed by the author on the role of dental infections as a cause of many skin diseases. In general, however, the book reflects accurately the present state of knowledge of dermatology. It is an excellent summary of the subject and as such should prove useful to the practitioner and student, especially the graduate student of dermatology.

Diseases of the Adrenals. By Louis J. Soffer, M.D. Cloth. Price, $5.50. Pp. 304, with 44 illustrations. Philadelphia: Lea & Febiger, 1946.

This excellent monograph systematically and concisely summarizes the biochemistry and physiology of the adrenal glands and presents in great detail the present day clinical knowledge of the diseases of the adrenals. Bibliographic references in support of the author's statements are liberally interspersed within the text, and the clinical chapters include illustrative case histories as well as some photographic material. The contents and arrangement are indicated by the material in the various chapters: the anatomy, morphologic structure and embryology of the adrenals; chemical and mechanical technics important in the diagnosis of adrenal cortical disease; physiology of adrenals; Addison's disease; the treatment of Addison's disease; adrenogenital syndrome; blood electrolyte and hormonal studies; sympathogoniomas, neuroblastomas and ganglioneuromas of the adrenal; pheochromocytoma and paraganglioma of the adrenal. While the chapters dealing with the biochemistry and physiology of the glands may not contain enough actual data to satisfy the experimentalist, the clinical chapters are complete. This volume should therefore serve as a useful and practical reference work for the internist and general practitioner.

Water Bacteriology with Special Reference to Sanitary Water Analysis. By Samuel Cate Prescott, B.S., Sc.D., Charles-Edward A. Winslow, S.M., Dr.P.H., and Mac Harvey McCrady, B.S., Chief, Division of Laboratories, Quebec Ministry of Health and Social Welfare, Quebec. Sixth edition. Cloth. Price, $4.50. Pp. 368. New York: John Wiley & Sons, Inc.; London: Chapman & Hall, Ltd., 1946.

For many years "Prescott and Winslow" has been the standard text and reference book in sanitary bacteriology in the United States, and another edition will be received with interest by workers in this field. In the new edition M. H. McCrady is added as author and it is stated that he is largely responsible for the almost complete rewriting of the text, made necessary by new advances over the past fifteen years since the appearance of the fifth edition in 1931.

The material on the coliform bacteria has been greatly enlarged and rearranged, with separate chapters devoted to the presumptive test, confirmation of the presence of coliforms, differentiation of organisms of the coliform group and the sanitary significance of these organisms. The selection, arrangement and discussions of this material are well balanced and informative. Here one can get a thorough, but brief, discussion of the rather numerous culture mediums and methods recommended within recent years for presumptive and confirmatory tests in bacteriologic water examination and the differential methods applied to the coliform bacteria. This is a distinct advance over the previous edition, not only because of the inclusion of new material, but in its arrangement and treatment. It comprises the chief and central portion of the book.

A rather striking feature of the first four chapters, which deal with the bacteria in natural waters, the collection of samples and kindred subjects, is the generous use of tables and data from the earlier literature of forty or more years ago. There is of

course real reason for this, for much of the pioneer work in sanitary bacteriology was done at that time and the results in many respects have retained their significance over the years. However, it would seem that some aspects of this earlier work could well have been omitted from the latest edition. It is rather surprising to find under "Types of Bacteria Found in Water" (page 23) no reference to work later than 1903.

The last two chapters cover the subjects of sewage and sewage effluents, and the examination of shellfish. New material supporting the use of *Escherichia coli* as an indicator for pollution of oysters is given, together with the latest revision of methods for the examination of shellfish and shellfish waters. Tables for obtaining the most probable numbers from dilution data are given in the appendix. This should be a handy source for reference.

The book is well arranged and, on the whole, the material is carefully selected and well balanced. Both the printing and the style contribute to make it one of the most readable of textbooks and reference works. It will doubtless continue to hold its preeminent place in the field of sanitary bacteriology, and workers in this field will welcome this very useful, up-to-date edition.

Alergia en la práctica clínica. Por B. Varela Fuentes, profesor de Clínica de nutrición y gastroenterolgía, P. P. Recarte, ayudante del Instituto de medicina experimental, y A. Graña, asistente de clínica médica, de la Facultad de medicina de Montevideo, Uruguay. Paper. Price, $8. Pp. 974, with illustrations. Buenos Aires & Mexico, D. F.: Espasa-Calpe, 1946.

This large paper-covered book, written in Spanish, is handsomely printed and well illustrated. It is one of the most pretentious books on the subject and covers the entire field of allergy. Most of the book deals with the literature, and the authors are liberal in giving credit to the many workers in this field. The bibliography is placed at the end of each chapter and is extensive; in addition there is an authors' index and one for subject matter. An excellent feature is a concise summary at the end of each chapter. One would wish that this summary, at least, would be printed both in Spanish and in English.

The subject matter is divided into twenty-two chapters which review theories of anaphylaxis, including the suspected role of histamine and the relationship with allergy; serum sickness; the Forsmann reaction; an extensive chapter on allergy in tuberculosis; allergy due to physical causes and to foods, and a chapter on pollen allergy with nice sketches of various pollens. Other chapters deal with nasal allergy, with bronchial asthma, and a small section on allergy of the skin. There is a good table which lists occupational causes, and the authors also discuss plant dermatitis, diagnosis of allergic diseases, histamine and Horton's syndrome, preparation of extracts, the genetic relationship of foods and allergic aspects in surgery, e. g. allergy to catgut. In addition to the more or less standard subjects found in most books on allergy the authors cover the subjects of hydatid disease, eosinophilia and lymphogranuloma inguinale. In the latter conditions and in the field of tuberculin allergy there are many case reports and much original work, all well portrayed. The book is exceptionally well written and should be translated into English and other languages.

It's How You Take It. By G. Colket Caner, M.D., Associate in Neurology, Massachusetts General Hospital, Boston. Cloth. Price, $2. Pp. 152. New York: Coward McCann, Inc., 1946.

The purpose of this book is to bring to the average boy or girl of 16 useful information about the mind and emotions. It is directed to high school students, particularly those who have difficulties of adjustment. The contents are set forth as answers to specific questions that fairly well cover the ground of human emotional problems. The answers are clear and sensible, frequently illustrated with brief reports of individual cases. However, the author obviously believes that one can influence emotionally directed behavior by appealing to the intelligent conscious portion of the personality. He advocates self influence by intellectual understanding, autosuggestion and properly directed prayer. Faults should be recognized and then eliminated. Neuroses and maladjustments are thus amenable to reason, logic and determination. The anxiety ridden, the phobic or the compulsive patient would be the first to deny the validity of this naïveté on the part of the psychiatrist author.

Asclepius: A Collection and Interpretation of the Testimonies. By Emma J. Edelstein and Ludwig Edelstein. Volume I: Collection of the Testimonies. Volume II: Interpretation of the Testimonies. Publications of the Institute of the History of Medicine, The Johns Hopkins University. Second Series: Texts and Documents. Cloth. Price, $7.50 per set of two volumes. Pp. 470; 277. Baltimore: Johns Hopkins Press; London: Oxford University Press, 1945.

Emma and Ludwig Edelstein have accomplished a difficult task in exemplary fashion with the publication of their "Asclepius." It is an experiment in scholarship and unique in its careful study of all references that pertain to the subject, as well as in the discriminating use of the source material in the construction of the second volume. The encyclopedic character of the work, the breadth of view everywhere in evidence is reminiscent of the prewar era of German scholarship and augurs well for the future enrichment of our own contributions in this direction. Even a casual reading of the second volume, which presents a well integrated summary of the facts and impressions gathered from the sources documented in the first, makes it apparent that the work will not only be useful in medical circles but of interest to the psychologist, the historian and the student of religion. The authors have treated in detail the background of the god of medicine, tracing the origins back through the stages of the heroic legends, then the adoption by the guild of physicians and the final unfolding of the idea of the divinity of the ancient hero. In further chapters the authors have explored the field of temple medicine, the gradual development of a fixed cult, with detailed examination of the ritual for the healthy as well as the sick. Finally there is presented a most comprehensive survey both of the images as well as the temples connected with the worship of the god in Greece and the Greek world. Asclepius became the personal god of the common people during the hellenistic period, and the worship extended far and wide during the time the Greek pantheon declined and vanished. As a result of this situation it was the worship of the 'savior' Asclepius that came into direct conflict with the spreading influence of the Christian faith. The publication of this valuable work was made possible by support extended by the Carnegie Foundation.

Nutrition and Chemical Growth in Childhood. Volume II: Original Data. By Icie G. Macy, Ph.D., Sc.D., Director of the Research Laboratory, Children's Fund of Michigan, Detroit. With a foreword by Lawrence Reynolds M.D., and a supplement by Julia Outhouse Holmes, Ph.D., Presenting Data Collected in the Department of Home Economics, Agricultural Experiment Station, College of Agriculture, University of Illinois. Fabrikoid. Price, $10. Pp. 433-1460, with 707 illustrations. Springfield, Ill.: Charles C Thomas, 1946.

In the review of volume I THE JOURNAL stated in anticipation that the forthcoming volume II would contain the cream of this project. This anticipation has been realized a hundredfold. Unfortunately it is practically impossible to do justice in a short review. The introduction contains tables of data on the analysis of foods. Then follow nearly a thousand pages of data on 33 individual children the nature and scope of which may be best presented by reviewing the record of Frank, covering eighty-eight pages and comprising family, medical, psychologic and endocrinologic history; then follow in order tables of measurements and weights over seven years, anthropometric data, detailed blood studies, basal metabolism measurements, measurements of wrist bones, skeletal maturation, food intake, podometer data, detailed food balance data, saliva cultures for caries activity and urine acidity. Interspersed among these tables are fifty-seven roentgenograms of skeletal studies at different ages, nine barium meal plates at different ages, three complete dental charts and numerous photographs of the subject.

There is an additional section of sixty pages devoted to a study of mineral metabolism of 12 preschool children comprising observations made by Julia O. Holmes at the University of Illinois. These studies, though less complete, are of the same general type, and data are similar to those in the main project. The addenda comprise fifty odd pages of observations on pathologic states in children such as osteopsathyrosis, ununited fracture, lipemia and anemias. The extensive index is cumulative for both volumes. There are no conclusions to be drawn. The book must be consulted to be appreciated. The authors cannot be commended too highly for the detailed attention to technical details and for the organization of such projects.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

GASTRIC WASHINGS IN CHILDREN WITH POSITIVE TUBERCULIN TESTS

To the Editor:—If a child has a positive tuberculin test and a negative chest film and is in every way apparently normal, should a gastric washing be done and cultured for tubercle bacilli? Is this a routine procedure generally in nursery schools? Would it be the ideal procedure not from an academic but from a public health point of view?

M.D., California.

ANSWER.—A child who reacts to tuberculin has tuberculous lesions somewhere in the body, and in all probability they contain living tubercle bacilli. If the lesions have been present for only three or four months there is only a 5 to 10 per cent chance that any evidence whatever would be found on the x-ray films. The reason for failure to find evidence of lesions by x-ray inspection in 90 to 95 per cent of the children who have them may be that (1) they may be so small that they do not cast shadows visible to the unaided eye; (2) they may be macroscopic in size but are not of sufficient density to absorb x-rays; (3) they may be in the 25 per cent of the lung which is not visualized by the usual x-ray inspection; (4) they may be in other parts of the body than the chest, as occurs in approximately 10 to 12 per cent of primary lesions. If the condition has been present for two or three years there is a 20 per cent chance or less that evidence of their location will be detected by x-ray inspection. This is because calcium has been deposited in some of the lesions of the parenchyma and root regions. This has resulted in sufficient density to cast shadows in lesions which previously could not be visualized. However, there is at least an 80 per cent chance that throughout the lifetime of the individual the x-ray will never reveal any evidence whatever of the location of the primary lesions.

If the primary lesions are in the lungs and regional lymph nodes and are of recent development, whether or not they can be located by x-ray inspection, there is always the possibility of tubercle bacilli being liberated, carried to the pharynx and swallowed without cough being present. Therefore they might be recovered through gastric washings. In about 25 per cent of those children who react to tuberculin and in whom fresh lesions are demonstrated by x-ray inspection, tubercle bacilli may be recovered from the gastric washings. Finding tubercle bacilli in this manner, however, does not necessarily mean that they entered the stomach by way of the bronchi, trachea, pharynx and esophagus. They may also reach the stomach through the liver, the bile duct and the duodenum. When tubercle bacilli are present in the gastric washings they may be found from time to time only for a few weeks to a few months in most cases after the primary lesions are first established. A tuberculin reaction indicates the presence of tubercle bacilli in the body, regardless of whether they are found in the gastric washings. Many nursery schools are now testing children with tuberculin in an attempt to find the source of the infection among the adult associates of the reactors. However, few gastric washings are being done among the reactors who present no x-ray shadows.

During the period in which tubercle bacilli are recoverable from the gastric washings they are practically all eliminated from the body through the intestinal tract, and if adequate sanitary measures are employed there is little danger of their being transmitted to the bodies of other persons. In the event such a child develops acute bronchitis, there is the likelihood of the sputum containing tubercle bacilli for the duration of the cough and expectoration. As children of nursery school age usually do not expectorate but swallow the sputum even during attacks of acute bronchitis, the danger of transmitting tubercle bacilli to others is lessened. Since so few attempts have been made to recover tubercle bacilli from the gastric contents of children who react to tuberculin but have clear x-ray films of the chest, it is highly desirable that a large group of such children be so examined. This would extend our knowledge of the subject and result in considerable practical information.

USE OF SACCHARIN IN WINE

To the Editor:—A diabetic patient is fond of a dry wine. Would the addition of saccharin to the wine be harmful?

M.D., Illinois.

ANSWER.—No.

SYMPTOMATOLOGY OF PARKINSONISM

To the Editor:—A white man aged 33 has had postencephalitic parkinsonism for the past eight years. About one year ago, while receiving atropine sulfate medication, he developed spasmodic retching, which occurred in paroxysms one or more times per day and which was not followed by vomiting. The episodes of retching occurred in an interval when he had not taken atropine for one week and continued to occur although medication was changed to other drugs. At present he is taking eight tablets of Vinobel, which controls his other symptoms fairly well but has no effect on the retching. These episodes have been considered to be similar to oculogyric crises, which sometimes occur in this disorder but which this patient has never had. How frequently do such episodes of retching occur in cases of postencephalitic parkinsonism? What is the mechanism involved in the production of this symptom? What treatment would reduce the frequency or severity of these episodes? Will the retching disappear spontaneously or become progressively worse?

B. G. Morrison, M.D., Northampton, Mass.

ANSWER.—The variety of symptoms shown by patients with postencephalitic parkinsonism is astounding. These are listed by S. A. Kinnier Wilson (Neurology, Baltimore, William Wood & Co., 1940) in his unusually complete chapter on epidemic encephalitis (volume I, chapter 8). In addition to oculogyric spasms there have been many forms of tics, speech disorders, torsion-spasm, myoclonia—all of them usually associated with parkinsonism such as this patient shows. The retching is presumably on the basis of irritability of the vagus nerve not dissimilar to the hiccups seen when the phrenic nerve is irritated. Various types of treatment are suggested by Wilson. If the belladonna alkaloids have not been successful in controlling this symptom, other drugs may be used such as scopolamine or hyoscyamine, stramonium, atropine and gelseminine. There is no general rule with regard to the use of these drugs. Ordinarily they must be evaluated by trial and error. Spontaneous remissions are not unknown in this disease, as is well exhibited by the recession of oculogyric spasms after a period of many months or years.

TOXICITY OF HYDROGEN CYANIDE GAS

To the Editor:—What is the lethal dose of hydrogen cyanide gas when inhaled? What concentration of this gas may be considered harmless to human beings? References in the literature differ greatly on this point. Are toxicity figures obtained on rats applicable to man? Is artificial respiration applicable in reviving victims overcome by this gas?

Joseph Seiberlich, Ph.D., Durham, N. H.

ANSWER.—Part of the confusion concerning the lethal level of hydrocyanic acid gas is due to indiscriminate consideration of the cyanides and hydrocyanic acid as equally toxic. Actually the cyanides are only about one fourth as dangerous. Apart from the caustic action of some cyanides, the damage depends on the quantity of hydrocyanic acid that may be derived from the compound, obviously not all of which will be hydrocyanic acid. Probably any quantity of hydrocyanic acid gas is harmful, but injury is not demonstrable at levels of 20 parts per million of air or less. The inhalation danger point as to fatality begins near 100 parts per million and increases rapidly. From the level of 200 parts per million to 500 parts per million death may occur within one hour. The exact quantity of this gas which produces death by inhalation in a human being has not been determined. In any death primarily inhalational some contributory gas enters by concomitant skin absorption. Because the mode of action of cyanogen compounds is fairly well established, animal findings can be accepted as applicable to man. Although artificial respiration may be futile, it should be applied regularly if there is cessation of respiration. Amyl nitrite is at this time the favored agent for immediate treatment. If artificial respiration does nothing more than disperse the amyl nitrite within the body, a useful purpose will possibly have been served.

CATHODE RAY OSCILLOGRAPH FOR HEART

To the Editor:—Could satisfactory readings of the changes in the electrical potential of the heart muscle be taken by the cathode-oscillograph in place of the usual electrocardiograph tracing?

M.D., New York.

ANSWER.—The cathode ray oscillograph has been used in many ways to record the electrocardiogram. Although it has been used most widely in Europe, it has also had a limited use in this country and has been made commercially by an English firm.

The machine, briefly described, consists of a cathode ray tube and a fluorescent screen. The specific properties of this screen are very important, and the magnitude of its actinic rating and the degree of persistence of the after-image will determine the method of recording the deflections of the beam. The tube has incorporated in it two sets of deflecting plates, one set operating in the horizontal direction and the other operating in the vertical direction. The beam will be deflected instantaneously in accordance with the difference in potential between the plates;

the degree of movement will be proportional to the difference in potential. The cathode ray oscillograph, however, is insensitive, and in order to detect the very slight changes in potential present between two electrodes on the extremities it is necessary to insert an amplifier between the electrodes and the deflecting plates—usually the vertical deflecting plates. This amplifier may then be standardized so that 1 millivolt will produce a deflection of the focused beam of 1 cm. It is important to avoid distortion and artefacts in the electrocardiographic tracing from overloading of the amplifier. Two types of machines may be used. If a highly actinic fluorescent screen of extremely short persistence of the image is used and the vertical deflecting plates are connected to the electrodes on the extremities through a properly standardized amplifier, the movements of the luminous spot may be photographed on a uniformly moving film, an electrocardiographic record thus being obtained. In the second type of system a low actinic fluorescent screen with long persistence of the image is used. The vertical deflecting plates are connected as in the first type of system, but the horizontal deflecting plates are connected though an amplifier to a sweep current. In this way one or more "standing waves" are produced on the screen, which may be viewed at the bedside. The cathode ray oscillograph has also been used for obtaining a vectorcardiogram in this country and abroad.

There are probably no real advantages of the cathode ray oscillograph over the electrocardiographs of the string galvanometer type or the vacuum tube amplifier type. The latter are much simpler and less expensive and are readily available in this country. Even bedside viewing of the electrocardiographic tracing may now be done with a machine of the vacuum tube amplifier type, which uses a fluorescent drum, with long persistence of the image.

ANGINA AND HYPERCHOLESTEROLEMIA

To the Editor:—**In the March 23, 1946 issue of The Journal under Queries and Minor Notes there is a discussion of Angina of Effort and Hypercholesterolemia which states that it is not at all infrequent in young patients to find a high blood cholesterol. Please give any references to this subject? Would small doses of thyroid extract be beneficial in cases of coronary thrombosis? This might lower the blood cholesterol and lessen the incidence of subsequent thrombosis in the coronary arteries. I have given small doses of thyroid extract in a good many cases to patients who have had a cardiac infarction and have felt that it was of some benefit.**

Ernest G. Scott, M.D., Lynchburg, Va.

ANSWER.—The strong possibility of cholesterol etiology of coronary arteriosclerosis and coronary heart disease has been pointed out for a good many years by certain observers, particularly pathologists such as Timothy Leary and N. Anitschkow. Occasional case reports mention this relationship, but there has been no extensive adequate review or clinical proof of the relationship. An interesting study of 76 persons with xanthomatosis belonging to seventeen families was reported by Carl Müller of Norway in the *Archives of Internal Medicine* (**64**:675 [Oct.] 1939); 68 of these 76 persons apparently had heart disease and, 59 of the 68 had angina pectoris. The quantity of cholesterol in the blood was determined in 35 of these patients and was found elevated in all instances. A postmortem study of the relationship of the cholesterol content of the blood serum after death in contrast to the degree of aortic arteriosclerosis as measured by the lipid content in the aortic wall was reported by Landé and Sperry (*Arch. Path.* **22**:301 [Sept.] 1936) but this study did not concern the coronary arteries or the cholesterol serum content during life. New studies are however in progress and doubtless will be reported soon.

TREATMENT OF FALSE TYPE KELOID

T the Editor:—**My daughter had a small benign dermoid cyst removed above the left breast, which left an irregular linear scar which is thick and a deep pink. What local medication that would remove the coloration from the scar and possibly remove or reduce its thickness can be suggested? I do not want to use x-rays or radium.** **M.D., Pennsylvania.**

ANSWER.—The lesion should be classed as a keloid of the so-called false type. The color generally fades after the lapse of some time and gives way to a tint approaching that of the surrounding skin. The keloid should not be cauterized or fulgurated, measures which generally are followed by even larger scar masses. Ordinary excision too is apt to leave the same result unless followed by irradiation measures. Irradiation with roentgen rays or radium is by far the most effective and the preferred method of treatment either following excision of the keloid or alone without such surgery. If there are reasons why x-rays or radium cannot be used, one may try the use of solidified carbon dioxide in repeated applications. Injections of 5 or 10 per cent solutions of creosote in olive oil have been recommended, as have solutions of thiosinamine. Scarification and application of stimulating ointments and plasters have been followed by improvement but must be used cautiously. They may at times give rise to keloids in themselves.

TREATMENT OF RECURRENT LYMPHANGITIS

To the Editor:—**In response to a request for treatment of recurring attacks of lymphangitis in an old case of thrombophlebitis of the right leg and thigh, a vaccine was advised to be made from a blood culture during a febrile period. Two such attempts, made by a reliable laboratory, have failed. Is there any stock vaccine that can be used? Has there been any literature on the most common cause of these highly febrile attacks? Can a vaccine be made direct from the skin during an active or quiescent period?**

M. T. Bolotin, M.D., Chicago.

ANSWER.—If blood cultures are negative immediately after the chill, an autogenous vaccine obviously cannot be prepared. Scrapings from the reddened, inflamed skin might contain the same organism, but this is doubtful. The treatment of cases like this is admittedly difficult, and consultation with a specialist may be advisable. The literature on allergic tissue reactions of this type is reviewed by:

Stevens, F. A.: Chronic Infectional Edema, THE JOURNAL, June 3, 1933, p. 1754.

Thompson, K. W.: Studies on the Relationship of Dermatomycosis to Ulceration and Gangrene, *Yale J. Biol. & Med.* **16**: 665 (July) 1944.

DANGERS OF LUMBAR PUNCTURE

To the Editor:—**Please discuss possible injuries or incapacities that might follow lumbar puncture.** **M.D., Virginia.**

ANSWER.—The dangers from lumbar puncture are certainly slight. Thousands of these examinations are performed without any complications whatever. Almost the only danger in most cases is the possibility of introducing infection and producing meningitis. Even this is almost impossible unless repeated punctures are made, the aseptic technic is grossly defective or some infected substance is injected into the spinal canal (as might be possible in spinal anesthesia). The possibility of damaging the posterior vertebral ligament and the intervertebral disk and thus preparing the way for herniation of the intervertebral disk has never been established. It is most remote and probably impossible.

In patients with increased intracranial tension a lumbar puncture may lead to herniation of the uncus through the incisura of the tentorium or of the cerebellum and brain stem through the foramen magnum and thus result in a fatality. In cases of intraspinal tumor a lumbar puncture may cause the tumor to be pushed down the spinal canal against the spinal cord, thus precipitating additional symptoms or aggravating existing ones.

URTICARIA AFTER BATHING

To the Editor:—**A white girl aged 19 years is allergic to water. Every time she bathes she has wheals and splotches that burn and itch for hours. Please discuss treatment.** **R. P. Woods, M.D., Altheimer, Ark.**

ANSWER.—The possibility of allergy to water is slight. However, allergy to low or high temperature is fairly common. The query does not state whether hot or cold water is responsible. If the reaction is due to heat, the patient should be treated with repeated exposure to heat, such as hot water or a heat lamp. This should be done daily. If a reaction ensues, cold water should be applied. In the case of cold sensitivity the procedure is reversed. In most instances the exposure of the forearms is sufficient.

For temporary relief the use of the new antihistaminic agents benadryl or pyribenzamine in 50 mg. doses would probably help.

ALLERGY TO SODIUM CHLORIDE

To the Editor:—**A patient states that from ten to thirty minutes after eating salt (NaCl) she has a skin eruption similar to urticaria with intense itching. Is this an allergic reaction to sodium chloride and is it possible for a person to be allergic to a normal constituent of the blood such as sodium chloride or glucose? Is it possible that the reaction is due to iodine or some impurity in the salt?**

Leslie A. Carlson, M.D., Fort Collins, Colorado

ANSWER.—It is extremely unlikely that one could have an allergic reaction to sodium chloride or glucose. There are two possibilities: (1) an allergy to an impurity in the salt, which is unlikely if the salt is of the usual purity, (2) or aggravation of an existing allergy by sodium chloride due to its tendency to hold fluid in the tissues.

SURGICAL TREATMENT OF GASTRIC ULCER

To the Editor:—A man aged 52 had a gastroenterostomy in 1933 for a gastric ulcer. He was placed on a restricted diet for one year and then allowed a liberal diet. In 1940 his stools became tarry black, and tests showed occult blood. For the next five years he followed a moderately restricted diet. In 1945 tarry black stools recurred and tests again showed occult blood. His work is chiefly mental. The patient is nervous and highly emotional. He was free from symptoms of ulcer from 1933 until two months ago. Are further surgical procedures indicated?

M.D., New York.

ANSWER.—Before deciding what type of treatment is to be used, a careful study of the patient should be made. X-ray study of the gastrointestinal tract is indicated as well as gastroscopy to rule out other lesions that might be responsible for tarry stools.

It should be determined whether the bleeding originates from the site of the previous ulcer or from a lesion possibly located at or near the new stoma.

With the long periods of relatively good health experienced after the operation in 1933 and a diagnosis of peptic ulcer established now, it would seem wise to treat the patient conservatively with diet, antacids and an educational program. If further symptoms, such as bleeding, develop or the economic position of the patient makes it impossible to carry out strict medical management, surgery is indicated. The type of operation probably best suited to this case would be resection and removal of the acid-bearing area of the stomach.

GERMICIDAL ACTION OF WITCH HAZEL

To the Editor:—Several proctologists are enthusiastic about the use of moist dressings of distilled extract of witch hazel after surgical operations. Is the small amount of alcohol in witch hazel (15 per cent according to the National Formulary) sufficient to keep the product sterile or have any germicidal action?

William A. Hinckle, M.D., Peoria, Ill.

ANSWER.—Under optimum conditions in vitro, 15 per cent ethyl alcohol by volume is a feeble germicide. Vegetative forms are killed slowly and uncertainly; spores are apt to be completely resistant. In the presence of wound secretions this antibacterial activity is even less pronounced, partly because alcohol is inactivated by combination with protein and partly because it fails under these conditions to make contact with infectious organisms. It is true that dressings or compresses of weak alcohol solutions sometimes are soothing to the patient, owing to slight superficial anesthetic action, but this effect is accomplished at the risk of injury to wound surfaces and consequent delay in healing. The ideal disinfectant solution to apply to wounds is one which kills bacteria or inhibits their growth, which is not inactivated by wound secretions and which does not injure living tissue. Extract of witch hazel does not fulfil those requirements.

HERNIA OF ANTERIOR TIBIAL MUSCLE

To the Editor:—Many young men, when supporting their weight on the ball of one foot or merely standing erect, have a painless, colorless, nontender soft swelling on the anterolateral aspect of the midlower part of the leg. Is this a lymphocele?

M.D., Massachusetts.

ANSWER.—The term "lymphocele" is usually reserved for accumulation of lymph in the soft tissues following trauma to larger lymph trunks; lymphoceles are seen in the thigh or in the retroperitoneal space protruding under Poupart's ligament. The condition described in the query is most likely a muscle hernia due to a traumatic or congenital defect in the fascia of the anterior tibial muscle. The bulge appears on plantar and disappears on dorsal flexion of the foot. It is usually painless and causes only cosmetic concern; however, one may observe painful traction on superficial nerve trunks, giving rise to radiation toward the periphery. It is relatively easy to close the fascial defect, although imbrication may be necessary.

DIPHENYLHYDANTOIN SODIUM AND DIABETES MELLITUS

To the Editor:—What effect does dilantin have on the carbohydrate metabolism of a diabetic adult, particularly diabetogenic effects?

M.D., New York.

ANSWER.—Diphenylhydantoin sodium has no diabetogenic effect on either the nondiabetic or the diabetic person. In a study of 200 epileptic patients, most of whom were on dilantin therapy, fasting blood sugar estimations were normal. It was found that phenytoin sodium did not affect the symptoms of hypoglycemia. In 2 cases of diabetes, blood sugar estimations were not related to the amount of phenytoin sodium administered daily.

LEECHES

To the Editor:—Has the chemical formula of the anticoagulant secretion of leeches been determined? Has any research been done to determine its toxicity in animals or human beings? How does it compare with other blood anticoagulants, and could it be used in conditions which require the use of anticoagulants?

Samuel Alter, M.D., Philadelphia.

ANSWER.—The anticoagulant secretion of leeches is called hirudin and appears only after the leech has fed on mammalian blood. It is an albuminose the structure of which is not established. The most potent extract is obtained from the largest leeches. It can be given intravenously to animals but is not very effective. Its solutions are not stable and may develop toxic potentialities through the formation of putrefactive bases (vomiting, severe bloody diarrhea, hemorrhagic lesions of the viscera). One mg. prevents 20 cc. of blood from clotting in vitro.

References:

Chem. Zentralbl. **2**: 730, 1943.
Klin. Wchnschr. **21**: 674, 1942.
Chemist & Druggist **133**: 294, 1946.
Sollmann, Torald: Manual of Pharmacology, Philadelphia and London, W. B. Saunders Company, 1942, p. 495.

TREATMENT OF PULMONARY MONILIASIS

To the Editor:—Please discuss the treatment, particularly as to immune serum or vaccine, of pulmonary monilia albicans infection.

W. C. Schintzius, M.D., Boonville, N. Y.

ANSWER.—There is little information available about the treatment of any mycotic disease with immune serum or vaccine. In view of the nature of the infection and the immunologic behavior of fungi in general, there is little reason to expect much success for this form of therapy. Vaccines are not of specific value in the treatment of any infectious disease. In many instances, excepting coccidioidomycosis, infection with yeasts or fungi seems to depend more on the diminished resistance of the host than on the invasiveness of the pathogen and treatment should be directed accordingly.

Report was recently made (THE JOURNAL, Jan. 26, 1946, p. 205) in which improvement seemed to follow a single instance of pulmonary moniliasis after treatment with small amounts of immune rabbit serum. The diagnosis of the case was not established beyond doubt.

ALKALI AND EXTRA FLUIDS WITH SULFADIAZINE

To the Editor:—There have been many articles on the prophylaxis of upper respiratory infections in military and civilian practice with both favorable and unfavorable results. None have mentioned the use of alkali and extra fluids along with 0.5 to 2 Gm. of sulfadiazine daily. Is it safe to give sulfadiazine in 0.5 to 2 Gm. doses daily without alkali and extra water? In the case of prophylaxis for rheumatic fever would the administration of alkali for months be an alkalosis hazard in children?

Walter W. Lee, M.D., Greenfield, Mass.

ANSWER.—When sulfadiazine is used for prophylactic purposes in doses of 0.5 to 2 Gm. daily it is not necessary to prescribe an alkali. Under these conditions complications involving the urinary tract are extremely rare. It is also not necessary to administer more than the daily requirements of fluid. It is assumed that such prophylactic medication is used only for patients with normal renal function. Since relatively large amounts of alkali are required to maintain an alkaline urine, there are possible hazards in administering a preparation for several months. In general, children tolerate the sulfonamides better than adults.

TREATMENT OF SEVERE HYPERKERATOSIS

To the Editor:—What is a satisfactory keratolytic for a patient with severe hyperkeratosis (familial keratosis plantaris et palmaris) involving the entire plantar surfaces of both feet? The feet become painful after weight bearing and when they become thick and firm. Paring them down too much results in painful weight bearing also. Thirty per cent salicylic acid in petrolatum (lanolin has been found ineffective) has failed to soften them. What is a satisfactory base? Can salicylic acid be used in concentrations as high as 50 to 60 per cent?

Morris Berk, M.D., San Francisco.

ANSWER.—With the heavy hyperkeratoses, such as are seen in keratoderma palmaris et plantaris, it is often advisable to use sapo mollis locally, followed by salicylic acid ointments or plasters. Since the ointments have not been effective in this case, it might be advisable to employ a salicylic acid plaster, such as the Beiersdorf plaster in 30 per cent strength. Potassium hydroxide may also be used carefully in 10 to 20 per cent strength to remove the major portion of the keratotic material, following which the use of a salicylic acid ointment might suffice. A satisfactory base for the salicylic acid in ointment form would be aquaphor (Duke Laboratories).